This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

41

Harvard Medical School

Surgical Library

Gift of

Harvard College Library

THE

LONDON LANCET.

A JOURNAL OF

BRITISH AND FOREIGN MEDICAL,

SURGICAL AND CHEMICAL SCIENCE,

CRITICISM, LITERATURE AND NEWS.

FOR THE YEAR 1869.

EDITED BY

JAMES G. WAKLEY, M.D., M.R.C.S.

◆

New York:
1869.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 1. NEW YORK, JANUARY, 1869.

Lectures

ON THE

PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM.

AND ON THE

TREATMENT OF ORGANIC NERVOUS AFFECTIONS.

By C. E. Brown-Sequard, M.D., F.R.S.,

Fellow of the Royal College of Physicians of London; Member of the National Academy of Science (U. S.) Etc.

LECTURE I.

ON SPINAL HEMIPLEGIA.

Characteristic symptoms of spinal hemiplegia.—Cases of wound and other kinds of lesion of the spinal cord having produced in the limbs, the face, and the eye the paralytic, anæsthetic, hyperæsthetic, and the principal vaso-motor symptoms of spinal hemiplegia.—Cases of incomplete spinal hemiplegia.—Comparison of spinal with cerebral hemiplegia.—Treatment of spinal hemiplegia.

Gentlemen,—It is my intention to give in this first lecture a full history of a very interesting, but very little known, kind of paralysis. You would vainly look for an account of the curious and peculiar symptoms of this affection in the works of even the best writers on the physiology and disease of the nervous system. I must say, however, that Dr. R. Bright[*] and Dr. Todd[†] have spoken of spinal hemiplegia, but no mention is made by them of the peculiar features of that affection, either because the cases they have seen were of the kind which I will describe hereafter under the name of incomplete spinal hemiplegia, or because the characteristic symptoms of the complete hemiplegia from disease of the spinal cord, although existing in those cases, have attracted no attention. On the other hand, some cases of genuine and complete spinal hemiplegia have been published by writers who have not understood what was the signification and importance of the symptoms they have described. Such is a remarkable case published by Dr. Dundas, and to which I shall revert by-and-by.

Experiments on animals have led me to the discovery of the very striking and curious features of the complete spinal hemiplegia. I gave for the first time a description of these symptoms in the lectures I delivered, in 1858, at St. Bartholomew's Hospital and at the College of Surgeons.[*] At that time, however, I had only observed them in animals; but since then I have seen no less than twenty cases of complete spinal hemiplegia, or of a similar affection, which I will describe under the name of hemi-paraplegia. Both these affections are certainly rare, and I owe the good chance I have had of observing many cases to my efforts in hunting for them, and to the kind assistance of medical friends and pupils.[†]

I hardly need to say that spinal hemiplegia is the effect of a disease of, or an injury to, a lateral half of the spinal cord. The principal symptoms are, paralysis of voluntary movements and hyperæsthesia on one side (the side of the lesion), and anæsthesia on the other side. But, besides these characteristic features, others are also observed, which are perhaps no less remarkable, amongst which I will only point out now symptoms of paralysis of the vaso-motor nerves in the limbs, the face and the eye.

The explanation of the symptoms of spinal hemiplegia is extremely simple and easy. Experiments on animals and a great many clinical facts show that an injury, destroying a small zone, or dividing the whole lateral half, of the spinal cord in the cervical region, produces the following symptoms:—

---

[*] Reports of Medical Cases, vol. ii., part i.

[†] Clinical Lectures on Paralysis, &c., by Dr. R. B. Todd, 1854, p. 321 *et seq.* Two cases are given, but one of them, as I will show in another lecture, was a case of reflex hemiplegia, followed by paraplegia.

[*] See my Course of Lectures on the Physiology and Pathology of the Central Nervous System. 1860. Lectures III., VII., and XII.

[†] Some interesting cases in support of my views have been reported by friends of mine, amongst whom I will name Dr. C. B. Radcliffe, Dr. J. Hughlings Jackson, and Dr. Victor Bazire. In one of his valuable lectures on Hemiplegia, Dr. Hughlings Jackson has called attention to this subject. (See the London Hospital Reports, vol. ii. 1865, p. 299.)

1st. Paralysis of the voluntary motor conductors on the same side.

2nd. A paralysis also of the vaso-motor conductors on the same side, and, as a consequence, a greater afflux of blood and a higher temperature.

3rd. Hyperæsthesia—i.e., increased sensibility in the paralysed parts, owing, in great measure at least, to the vaso-motor paralysis.

4th. The well-known effects of division of the cervical sympathetic nerve in the eye and face on the side of that section, owing to the paralysis of the nerve-fibres which the spinal cord gives to that nerve through the first and second dorsal nerves.

5th. There is anæsthesia of all kinds of sensibility, excepting the muscular sense, in the side opposite to that of the lesion in the spinal cord, owing to the fact that the conductors of sensitive impressions from the trunk and limbs decussate in the spinal cord, so that an injury in the cervical region of that organ in the *right* side, for instance, alters or destroys the conductors from the *left* side of the body.

6th. There is some degree of anæsthesia also on the side of the lesion, in a very limited zone, above the hyperæsthetic parts, and indicating the level of the lesion in the cord. This anæsthesia is due to the fact that the conductors of sensitive impressions reaching the cord through the posterior roots, at the level or a little below the seat of the alteration, have to pass through the altered part to reach the other side of the cord.

Some differences in the symptoms will of course exist, according to the extent and seat of the lesion in the spinal cord, and to its duration at the time we examine the patients. I intend to confine myself in this lecture to the properly called spinal hemiplegia—i.e., a paralysis of both limbs on one side, caused by a lesion in the cervical part of the cord; leaving for the next lecture the history of hemi-paraplegia—i.e., a paralysis of only one of the lower limbs, and caused by lesion in the dorsal or lumbar parts of the cord.

The following table shows at a glance what are the symptoms observed in the two sides of the body, when the disease of, or injury to, the spinal cord exists high up in one of the lateral halves of the cervico-brachial enlargement:—

ON THE SIDE OF THE LESION.	ON THE OTHER SIDE.
I.—*In the Lower Limbs.*	
1st. More or less complete paralysis.	1st. No paralysis.
2nd. Loss or diminution of the muscular sense.	2nd. Muscular sense normal.
3rd. Increased sensibility to touch, tickling, heat and cold, and painful impressions (pricking, pinching, galvanism, &c.)	3rd. Loss or marked diminution of the four kinds of sensibility.
4th. Perfect knowledge of the part on which is made a sensitive impression of any kind.	4th. Loss or great diminution of the faculty of detecting where an impression is made.
5th. In the beginning, and sometimes for years, greater afflux of blood and elevation of temperature.	5th. Temperature relatively and sometimes absolutely lower.
6th. Generally no other alteration of nutrition than a muscular atrophy, which is not considerable even after a much prolonged paralysis.	6th. No muscular atrophy, but other kinds of alteration of nutrition.
II.—*In the Upper Limbs.*	
7th. More or less muscles paralysed.	7th. No paralysis.
8th. Increased sensibility in a few, in many, or in almost all parts of the limb, mixed up sometimes with anæsthesia of one or several kinds of feeling in some parts.	8th. More or less complete anæsthesia of all kinds of feeling, in all or in many parts.
III.—*In the Neck and Head.*	
9th. Sometimes anæsthesia and hyperæsthesia in some parts of the neck.	9th. Sometimes anæsthesia.
10th. Symptoms of section of the vaso-motor nerve in the face and eye (such as higher temperature, increased sensibility, partial closure of the eyelids, constricted pupil, slight contraction of some facial muscles, &c.)	10th. Normal state in the face and eye.

These symptoms may be summed up thus:—*On the side of the lesion in the cord* there is—

Paralysis of voluntary movement, of the muscular sense, and of bloodvessels;

Increased sensibility in the trunk and limbs, except, sometimes, in a part of the arm, chest, or neck, where there may be some anæsthesia; and

Symptoms of vaso-motor paralysis in the limbs, the face, and the eye.

While *on the other side* there is—

Anæsthesia in both limbs; and

No paralysis.

To sum up still more, I will say that spinal hemiplegia (when complete) is characterised by loss of voluntary movements in one side of the body, and loss of sensibility in the other.

It is not necessary, I believe, to point out the differences between the complete spinal hemiplegia and cerebral spinal hemiplegia. Those differences are sufficiently striking; but in speaking of incomplete spinal hemiplegia I will revert to this diagnosis.

I will now give a number of cases, beginning with several observed by myself.

CASE 1. *Wound of the spinal cord: paralysis of voluntary movement in the right limbs; hyperæsthesia of the four kinds of sensibility in the right lower limb, with anæsthesia of the same kinds of feeling in the left limbs, and signs of vaso-motor paralysis in the face and eye on the right side.*—Mr. F——, aged thirty-five, captain of a merchant vessel, was stabbed in the neck, in the harbor of San Francisco, California, on the 19th of October, 1853. He lost his senses instantly, and fell. He bled profusely, but someone soon succeeded in stopping the hæmorrhage by pressing on the wound. He remained unconscious from the time he received the stab (about 8 P.M.) until the next morning. During the night he was a little delirous and feverish, but since then he has had no fever or cerebral symptoms. On recovering his senses he found that he was completely paralysed in both limbs on the right side, and that the left side was also partly paralysed. Sensibility, instead of being lost in the completely paralysed side, was so much increased that he could not lie on that side (the right) owing to the pain caused by the pressure on the bed. The sight, hearing, and other senses were unaffected; his speech was not impaired, he could swallow without any difficulty, and move freely all the muscles of the eyes and face. His breathing was not disturbed, but his pulse was weak and slow. He had no vomiting, and no decided incontinence of fæces or urine, but he had to hasten to pass his water when the need was felt. He remained several days in this condition, being all the time very weak, and often almost in a syncopal state, yet always perfectly conscious, except on one occasion, when, having been much moved at seeing a friend, he completely fainted away for a few minutes. For two or three months he was absolutely unable to turn in bed, and it was only at the end of four months that he began to stand, for a few moments, on his left leg. The wound did not give him much pain, and soon healed, and the movements of the head and neck became quite free after this healing. Symptoms of slight inflammation, or at least great congestion, of a part of the right half of the spinal cord —such as twitchings, jerkings, and tremblings, with a feeling of pricking and other painful sensations in the paralysed limbs—soon appeared after the injury, and still occur now. Gradually, but very slowly, he improved, and was in the following condition when I first saw him.

In August, 1862, he came to me, recommended by Mr. Jabez Hogg. His general health was pretty good. There was nothing abnormal in the head and face except what will be hereafter mentioned. The wound has left a scar a little more than one inch in length, longitudinal and almost parallel to the middle line of the spine, to the left of it at a distance of about three inches from it, and distant from the front middle line about five inches, having its top part about an inch and a half behind the lower part of the left ear. He had become able to walk with the help of a cane, although the right limbs were still notably paralysed and stiff. The left limbs had for a long while recovered completely the power of motion.

Comparing the two lower extremities one with the other, I found that the *right (the paralysed one) had a morbidly increased sensibility* (hyperæsthesia), while the *left had a considerable degree of anæsthesia*. Studying the various kinds of sensibility, I ascertained the following facts:—

1st. The *tactile sensibility* was increased in most parts of the paralysed limb, and considerably decreased in every part of the other, as proved by these observations.

Right, or paralysed leg.	*Left, or non-paralysed leg.*
The application of the æsthesiometer gives the sensation of the two points when at a distance of 2¼ or 3 millimetres on the dorsal surface of the big toe.	This application only gives the sensation of one point, on the big toe, even when the points are, as far as they can be, one from the other.
On the dorsum of the foot the two points are felt at a distance of from 2¼ to 2½ centimetres.	On that part, even at the distance of 7 centimetres, the two points only give the sensation of one.
On the sole of the foot the two points are felt at a distance of 4 centimetres.	Only one point felt, even when the two are 12 centimetres one from the other.
On the front part of the leg both points were felt when separated by from 12 to 13 millimetres.	Here only one point felt, even when the interval between the two was 13 centimetres.
On the posterior aspect of the leg both points were felt at a distance of 14 to 16 millimetres.	Here always but one point, even when the two were 12 or 13 centimetres one from the other.

For his feeling one point on the left leg it was necessary to press very hard, while he was able to distinguish the two points even when they touched but very slightly the paralysed leg. The faculty of recognising the shape of bodies applied on the legs was quite lost in the left leg, and perfect, on the contrary, in the right or the paralysed leg.

2nd. The *feeling of tickling* was considerably increased in the right or paralysed lower extremity, while it was completely lost in the non-paralysed one.

3rd. The *sense of temperature* (the power of feeling heat and cold) was considerably increased in the right or paralysed lower limb, and lost in the left, which has accidentally been burnt sometimes without his feeling the burn.

4th. There was considerable hyperæsthesia as regards the *painful sensations* of pricking and pinching in the right or paralysed lower extremity while there was almost a complete analgesia in the left or non-paralysed leg.

5th The *faculty of recognising the place* on which was made a sensitive impression of any kind was perfect in the right or paralysed leg, while it was lost in the whole length of the left lower limb.

6th. The power of directing movements, which depends on the *muscular sense*, was markedly altered in the paralysed lower limb, while it was perfect in the non-paralysed one.

With regard to the condition of nutrition and of animal heat in the two lower extremities, I found: (1) that, although the paralysis had existed for nine years, the atrophy of the right limb was not very great—the calf of the leg on that side had a circumference of 31¼ centimetres, while that of the non-paralysed leg was 35 centimetres; (2) that, notwithstanding its atrophy, the paralysed leg was apparently warmer than the other (between the toes the thermometer marked 1° cent. (1·8° Fahr.) more in the paralysed than in the other side); (3) that the bloodvessels were larger and more numerous in the paralysed leg than in the other; (4) that the cutaneous perspiration was more abundant in the paralysed leg than in the other; (5) that the nails were normal in the paralysed lower extremity, while in the other one (the anæsthetic) they were extremely thick, and presented many parallel longitudinal splits, besides being very loosely attached to the skin.

Passing now to the upper limbs, I found that they offered the following differences:—

1st. The right limb was still notably paralysed and contracted;* while the left was strong and perfectly normal as regards voluntary movements.

2nd. The tactile sensibility was altered in both limbs. On the right side the back of the hand gave the sensation of the two points of the æsthesiometer when at a distance of 2 centimetres, while on the left it was only at 9 centimetres that they were both felt. In the palm of the hand the two points were recognised at the distance of 6 or 7 millimetres on the right side, and 10 to 12 millimetres on the left. On the forearm, in its front part, the limit of recognition of two points was 2⅓ centim. in the right side, and 2½ in the left. In the back part of the forearm the limit was 1½ centim. in both sides. Both arms, from the elbow to the shoulder, were so anæsthetic that it was necessary to press hard to make the points be felt at all, and it was only when they were at 12 centim. that the two were felt. The faculty of recognising the shape of bodies was diminished in both hands, and especially in the index and thumb of the right and in the other fingers of the left hand. In the fingers of both hands he did not recognise the two points of the æsthesiometer even at a distance of 4 centim. The knowledge of the place touched was diminished in both arms, but much more in the left one.

3rd. As regards the *feeling of tickling*, several parts of the upper limb on the right side were endowed with it to a greater degree than usual. Not so with the left arm, which was almost entirely deprived of that kind of feeling.

4th. The *sense of temperature* was increased in the right arm, and almost completely lost in the left upper limb—so much so that he has sometimes been burnt without feeling it at all.

5th. The *sensibility to pricking and pinching* was increased in the right limb, while in the left the anæsthesia to painful sensations is such that he once accidentally had nails stuck into his fingers without being aware of it till he felt a resistance when he tried to withdraw his hand.

6th. The *muscular sense* was very much altered in the right limb (the paralysed one), and perfect in the left.

7th. There was some atrophy of the muscles of the right limb, the forearm there measuring 24⅓ centimetres, while the left forearm had a circumference of 25⅓ centimetres.

8th. There was more blood in the right limb than in the other, and its temperature was also superior by from 1° to 2° cent. (1°·8 to 3°·6 Fahr.) Besides, the right arm perspired more freely than the left. The nails of the left hand were altered, but less than those of the left foot.

Examining the eyes and face, I found the following differences between the two sides:—

1st. The eyelids were less opened on the right side than on the left.

2nd. Both pupils were constricted; but his sight was not so good with the right as with the left eye.

3rd. The lachrymal secretion was more abundant in the right side than in the other.

4th. He had frequent headaches, limited to the right side.

5th. Several muscles of the face were slightly contracted on the right side; so that the angle of the mouth was nearer the ear and the eye on that side than on the other.

6th. The sensibility of the face was very slightly increased on both sides, but more on the right than the left.

He has very often been seized with a peculiar kind of convulsive attacks, which have occurred sometimes spontaneously; but by far more frequently when he stretched himself in bed. The first of these attacks he had a few weeks after the injury. It began with a spasmodic closure of the jaws, and a tetanic stiffness in the trunk and four limbs; and, after a few seconds, epileptiform convulsions took place in the right limbs, and lasted half a minute. For several years he has had three or four convulsive attacks a week; but the frequency gradually became less, and lately he has had but five or six seizures a month. The violence has become usually very much less also, the attacks consisting only of a cramp, followed by some shaking of the right leg. In stronger attacks, the left limbs still become rigid; while the right ones, and particularly the arm, are seized with clonic convulsions. His attacks only last half a minute.

The muscles of the vertebral column on the right side are weak and somewhat contracted.

Among the referred sensations which are so common in affections of the spinal cord one only has been very troublesome: it is a feeling of burning heat, apparently arising from the index finger of the left hand, which was quite anæsthetic, especially to cold and heat.

He has not had spontaneous pain in the spine, but when I pressed on the fourth and fifth cervical vertebræ I found them very tender. The skin, however, was much benumbed over these bones, and there was almost complete anæsthesia on the right side, extending a few inches from the middle line at the level of the fourth and fifth cervical vertebræ. Behind the ears there was hyperæsthesia in both sides: he felt the two points of the æsthesiometer when only at 4 millimetres one from the other.

Since I last saw the patient, my able friend, Dr. Hughling Jackson, has had the kindness to examine him again, in September, 1865, and has made out a few facts which deserve to be mentioned: 1st. The right (paralysed) lower limb moves vigorously when the sole of the foot is tickled, but very much less than the other. 2d. Although the muscles of the left (anæsthetic) lower limb contract much more than those of the right (paralytic) one, he felt pain when this last limb was galvanised, but not when the other was submitted to the same irritation.* 3rd. The temperature of the right leg, which previously was higher, was found inferior to that of the left. 4th. The patient married in 1864, and he states that his sexual power is not much diminished. The faculty of retaining his water is still somewhat weak.

Before I examine what took place in this case, I will say that M. F——, the patient, was shown by me to many members of the British Medical Association, at their meeting in London in 1862; and also that he was often shown to the physicians and students attending my clinical lectures at the National Hospital for the Paralysed and Epileptic.

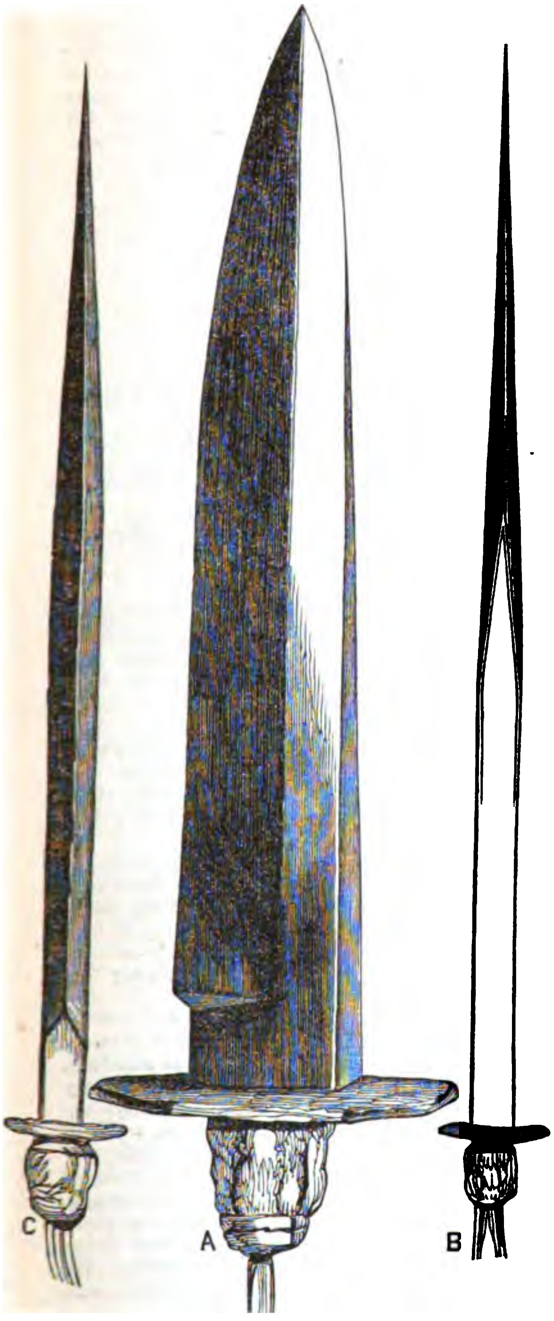
---

* A few years before I first saw him there was such a spasmodic contraction of the calf of the right leg that Mr. Lonsdale divided the tendo Achillis.

* In these researches Dr. Jackson has had the valuable assistance of Mr. J. N. Radcliffe.

M. F——, is very short, and was stabbed by a man who is at least six feet high. These facts will help to make you understand how the wound was inflicted. The two men were standing, Mr. F—— with his back turned to his assailant, who probably tried to kill him by plunging a knife from above into the lungs. Here is a drawing (Fig. 1), which I owe to Dr. J. Hughlings Jackson, representing that knife nearly in its full length. The blade was about six inches long, and has been shortened a few lines by being sharpened. There was blood upon it in all its length except about 1½ inch.

FIG. 1.



A, gives a side view of the blade of the knife. B, the back side. C, the sharp edge. In B and C the engraver has represented the points of the blade thinner than they are.

It is, of course, impossible to know exactly what was the greatest injury to the spinal cord in this case. The patient is, I believe, still alive, and if an autopsy were made at this late day (the wound was inflicted in October, 1853—i.e., fifteen years ago), it would not reveal what was the lesion which existed at first. But in the actual state of our knowledge, as regards the physiology and pathology of the spinal cord, it is easy to explain most, if not all, the details of that case. If something must remain doubtful, it is, at any rate, certain that the nervous centre was wounded in the cervical region, and that its two lateral halves were injured, but the right one very much more than the left.

Judging, on the one hand, from the symptoms and on the other hand from the shape of the blade of the knife, from the location of the scar and from the very small angle that would be formed by the line of the scar and a line parallel to the longitudinal axis of the spinal cord the knife must have followed an oblique course from above downwards, from the left to the right, and from behind forwards. It must have divided, or otherwise injured, at least a part of the left side of the spinal cord (the posterior column), and a very large portion of its right half (its grey matter chiefly, but other parts also). Blood effused in the right side of the cord, in the part where the number and size of bloodvessels are the greatest—i.e., the grey matter—has produced a pressure which most likely was the cause of the paralysis of the four limbs which existed for some time after the stabbing.

The study of this case leads to the following remarks:—

1st. There was fever only for a short time. It is so usually in cases of incised or punctured wounds of the spinal cord.

2nd. As usually also in such cases, there have been only a few symptoms of inflammation of the spinal cord.

3rd. The patient fainted away twice: at first when he was stabbed, and again nine days after. His pulse remained very weak for a long time. A syncopal state (or at least a weak pulse) is not rare after an injury to the spinal cord, in the cervical region, especially in cases in which that nervous centre has been completely or almost completely crushed by a broken piece of bone. In experiments on animals, I have ascertained that crushing or dividing suddenly a good part of the cord, in the cervical region, acts on the heart in the same way as similar injuries to the medulla oblongata. This influence ceases to exist when the experiments are made after the division of the par vagum.

4th. A convulsive affection, resembling that which I produce in certain animals by the section of a lateral half of the spinal cord, soon appeared in the patient after his wound. This must be a very rare effect of an injury to the cord in our species, as I have vainly looked for it in all the cases I know of a punctured or incised wound of that organ, and I have only found one other case of injury to the cord in which there were general convulsions. In this case there was pressure by an exostosis; it was published by Dr. E. Geddings ("North Amer. Arch. of Med. and Surg. Science." Baltimore, 1835, vol. i. p. 110). On the other hand, it is well known that tubercles in the spinal cord usually cause convulsions. If in limbs that are not paralysed, convulsions are very rare, in cases of incised or punctured wounds of the spinal cord, local spasmodic movements, limited to the paralysed limbs, such as F—— often had, are, on the contrary, almost constant in cases of spinal hemiplegia due to such wounds or to other causes.

5th. The increased sensibility to the various kinds of impression (touch, tickling, heat and cold, pricking, &c.) on the right lower limb is quite remarkable on account of its intensity and its long duration. I pointed out long ago (in 1849), at the time I introduced in the practice of medicine the use of Weber's means of measuring tactile sensibility, the possibility for that special kind of feeling to become considerably increased, as much, in fact, as we know that sensibility to painful impressions can increase. In the case of F——, we find that the tactile sensibility of the big toe and the leg on the right side was three or four times as acute as in health.

6th. In this case, as usual in cases of spinal hemiplegia, there was some anæsthesia, particularly to tactile impressions in the arm and neck on the side where the lower limb and other parts were hyperæsthetic. This I have already explained in the beginning of this lecture, and I will only say that this loss of feeling is of importance, in conjunction with the hyperæsthesia and paralysis and also the facial and ocular symptoms, all on the same side, to prove that the spinal cord was chiefly injured on that side (the right).

7th. There was in this case a symptom which I did not mention in the list I gave of the symptoms of spinal hemiplegia: there was some degree of hyperæsthesia in both sides of the neck above the limits of anæsthesia, and in parts receiving their nerves from the spinal cord above the injury. Mr. G. Busk found, long ago, in a case of complete paraplegia (reported by Dr. W. Budd in the "Medico-Chir. Transactions." 1839, vol. xxii., p. 179), a circular zone of hyperæsthesia at the limit of anæsthesia and paralysis. In 1856, an eminent physiologist, Dr. Aug. Waller ("Comptes Rendus de la Société de Biologie," 1856, p. 138) found that in guinea-pigs, in which he had divided transversely the spinal cord, there was a narrow circular zone of hyperæsthesia on the upper limit of the anæsthesia. I have ascertained that a division of a lateral half of the spinal cord in the cervical region, in rabbits, produces hyperæsthesia in the same side in a small zone animated by nerves arising from the cord above the section; and that if the posterior column, with perhaps a very small part of the grey matter of the other side, are also divided transversely at the level of the first operation, there is hyperæsthesia also in a similar zone on this last side. This is most likely what occurred in the case of F——.

8th. The persistence of respiratory movements in the side of the principal injury to the spinal cord, as well as in the other, was due—1st, partly to the fact that that nervous centre was wounded below the origins of the phrenic nerve, excepting perhaps the small branch given off by the fifth cervical nerve; 2ndly, partly also the fact that some part of the right side of the spinal cord remained uninjured.

9th. It may surprise many persons that the power of voluntary movement in this case returned to a greater extent than the power of feeling. When a nerve is divided, it is well known that sensibility returns much quicker than voluntary movements. I will only say now on this subject that cases of injury to the spinal cord prove, like that of F——, that the reverse takes place for this organ—i.e., that wounds of the spinal cord allow of a much less rapid return of sensibility than of voluntary movements.

(To be continued.)

Clinical Lecture

ON

SIX CASES OF ANEURISM.

Delivered at University College Hospital.

By John Eric Erichsen, Esq., F.R.C.S.,

Senior Surgeon to the Hospital, and
Holme Professor of Clinical Surgery in the College.

Gentlemen,—I wish to-day to direct your attention to several cases of aneurism that have either been lately in the hospital, or that present some points of interest in connexion with cases which have recently been under our care.

The first three of the cases to which I will direct your attention are cases of aneurism of the lower extremity that were mistaken for abscess, and for a time treated as such, their aneurismal character having been overlooked till they came under observation here. By the treatment to which they had been subjected, in consequence of that error of diagnosis, their condition was, I need scarcely say, rendered materially worse; and it became necessary, in two cases at all events, to depart from the treatment of aneurism which is usual under ordinary circumstances.

Case 1.—The first case to which I shall direct your attention is that of a man named Samuel H——, sixty-four years of age, who was admitted into the hospital August 7th, 1861. The history of the case is, that on July 30th, eight days before admission, he tired himself by a walk of about five miles, but he could not recollect any blow or sprain. After the walk he first noticed a lump on his thigh, about the size of a hen's egg. The swelling gradually got larger, and was poulticed. Four days before admission—Aug. 3rd—some discoloration came on in the tumour. He was afterwards seen by a medical man, who ordered a continuation of the poultice, and sent him to the hospital.

On admission, a large tumour was observed on the front of the right thigh. This was tense and shining, and of the natural color of the skin. It had a distinct eccentric impulse, and, on applying a stethoscope, the aneurismal bruit could be heard. Above the tumour there was considerable ecchymosis and fullness, not reaching above Poupart's ligament, and chiefly on the inner part of the thigh. The limb was cold, but not œdematous. On compressing the external iliac artery, the pulsation ceased, and the tumour diminished somewhat in size; on taking off the pressure, the pulsation returned, and the tumour resumed its former dimensions. It was evidently an aneurism, which was on the point of becoming diffused, if it had not already become so. There was no alternative but to tie the external iliac artery, which I did forthwith in the usual manner and at the usual place. The artery at the spot was perfectly healthy. Without troubling you with the details of the case, the patient went on sufficiently well for the first fortnight; but from the twelfth to the fourteenth day pyæmic symptoms began to develop themselves, and he died, four weeks after the operation, with abscess in the pelvis and general pyæmia.

On examination after death, a cylindrical dilatation of the superficial femoral was found, and there was a diffused aneurism, containing a large, hard clot; the aperture in the artery communicating with the diffused aneurism was small in size, about that of a threepenny-piece.

It would appear, then, that it was an aneurism that was rather suddenly formed—a diffused aneurism,—supervening upon a cylindrical dilatation of the superficial femoral, forming through a small aperture, and without any distinct circumscribed aneurism preceding it.

Case 2.—The second case is also an aneurism of the groin, which was mistaken for an abscess, treated as an abscess by being poulticed, and eventually punctured by a surgeon, and then brought to the hospital. The case is as follows:—

William S——, aged twenty-nine, admitted into the hospital Sept. 11th, 1867. For about eight months before admission he had noticed a tumour in the upper part of the thigh. When first observed it was as big as a walnut. It was painful, and seemed to throb or pulsate distinctly. He remembers no blow or strain in the situation of the tumour. Under the direction of a medical man it was poulticed for some months, and the skin beginning to get discolored, on the morning of the day of his admission the surgeon introduced a lancet into the tumour, on the supposition that matter was present. On admission, a tumour was found, about the size of the clenched fist, immediately below Poupart's ligament, in the upper part of the left thigh. It pulsated freely, and the conical top of the tumour was ecchymosed, and presented the mark of a recent puncture. There was no hæmorrhage. The patient was somewhat faint and excited, but otherwise well. In a consultation between Mr. Heath and myself, it was agreed that the best thing would be to open up the aneurism completely, and tie the artery above and below it. This was accordingly done by Mr. Heath, who, as I was not on duty at the time, would have the subsequent charge of the case. Lister's abdominal tourniquet was applied to the abdominal aorta, so as to completely arrest the pulsation in the tumour. Mr. Heath then made a puncture in the upper part of the sac, and immediately introduced his finger, which he applied to the opening that could be felt in the artery. The sac was then slit up on a director, the coagula turned out, and the interior sponged. A double ligature was next passed round the artery, above and below the opening into the sac. This was a work of some difficulty for reasons which I shall immediately mention; but at last, by introducing a large probe into the open mouth of the artery, Mr. Heath passed the ligatures round the vessel, and all danger of hæmorrhage was put a stop to.

The patient rallied fairly well from the operation, and with the exception of slight restlessness during the first few days, he went on very well till the 20th, the wound suppurating very freely. On that date—nine days after the operation—secondary hæmorrhage came on to a small extent, which was arrested by the pressure of a pad. Slight hæmorrhage occurred again early the next morning (21st), also easily arrested by a pad and spica bandage, Lister's tourniquet being kept on the aorta, ready for application. The patient's pulse became softer and more frequent, and the wound continued to suppurate freely. Early the next morning there was again free oozing, which soon became more copious. Compressors having been applied to the aorta and femoral above the wound, the dressings were removed by Mr. Berkely Hill. It was found that the ligature, which had included a quantity of thickened tissue connected with the walls of the vessel, had sloughed through this, and so had ceased to compress the artery itself, which was quite patent. Free hæmorrhage took place to about twelve ounces, ultimately arrested by another ligature round the vessel. No further loss of blood took place, but the patient, who had become very anæmic, rapidly sank, and died about midday, eleven days after the operation.

Case 3.—The third case is one of popliteal aneurism mistaken for abscess. James L——, aged thirty-seven, brewer's drayman, was admitted April 15th, 1862. He stated that nine or ten weeks before admission he first observed the right ham to be somewhat swollen. The swelling spread down the leg, but did not at that time involve the foot. He noticed no particular difference between the two feet. About a fortnight after first noticing it he assisted his fellow-laborers to lift a heavy cask of beer; and about the middle of the next day he felt a sudden pain in the ham, with a peculiar numbness. On the Tuesday he applied at an hospital, which need not be mentioned, and received some medicine and was told to keep quiet. The next day he was admitted into a public institution, where the swelling in the ham was poulticed. It continued to be poulticed till the day before his admission here, when a puncture was made into the swelling. Hæmorrhage followed the puncture, and the swelling increased in size. The following day hæmorrhage returned, and two pints of blood were lost. A tourniquet arrested the bleeding, and he was brought to this hospital. Soon after his admission he was in a very depressed state, with an obvious popliteal aneurism. In the centre of this was an incision, through which a mass of coagula protruded. I immediately amputated the limb above the knee by double lateral flaps, and the patient did perfectly well.

On examining the limb, it was found to have been a popliteal aneurism, which had become diffused, and had been opened in the way just mentioned.

Without going further into the details of these cases, you will see that here were three cases, two of aneurism of the groin and one of aneurism of the ham, all of which were mistaken for abscess before admission into the hospital, two of which were actually punctured by a surgeon, and two eventually terminated fatally, no doubt in great measure owing to this mistake having been committed; and in the third it necessitated amputation of the limb, instead of the aneurism being treated by compression or by ligature of the femoral artery.

Now before we proceed to discuss more fully these cases, which I have very briefly related to you, I may say a word or two about this point of diagnosis—between aneurism and abscess. In the majority of cases of aneurism nothing is easier than to make the diagnosis. When an aneurism is thoroughly formed, is pulsating eccentrically, and has a distinct bruit; when the pulsation and the bruit are arrested by compression of the artery leading to the tumour; when the size of the tumour diminishes when the vessel leading to it is compressed; when the pulsation and bruit both return on the pressure being removed; when the tumour increases in size on the pressure being removed; when that increase in size is evidently eccentric, and the pulsation eccentric from the interior of the tumour—a dilatation as well as a pulsation,—there can never be any serious difficulty in distinguishing an aneurism from everything else. But when an aneurism has become diffused; when the pulsation in it is becoming very feeble; when the bruit in it has become obscure; when the tissues that are infiltrated with the blood that has been effused feel somewhat sodden and brawny; when there is perhaps, here and there, an indistinct feeling of fluctuation,—one can understand that, unless care is taken in investigating the early history of the case, and unless care is taken in making a minute, prolonged, and what may be called a skilled manual examination of the tumour, it may possibly, in an off-hand manner, be supposed to be an abscess, a chronic abscess, in the region in which it occurs. But when you find a tumour presenting more or less of the characters that I have just described occurring in a situation in which aneurisms are likely to occur—as the groin, the ham, or the axilla,—it is only proper to institute a very careful examination; and if you make such an examination, with the hand to the tumour, with the ear to the tumour, and with the finger applied to the artery above the tumour so as to control the flow of blood through it, there is very little danger indeed of your falling into the most serious and probably fatal error of mistaking an aneurism for an abscess.

Now, with regard to the treatment that was adopted in these three cases, you will observe that in each case we had recourse to a different method of treatment. In the first case the artery leading to the tumour was tied. In the second case the tumour was laid open; the old operation for aneurism was performed. In the third case the limb was amputated. Why were three different methods of treatment adopted in these three cases? For this reason. Each of the cases differed from the others in very important particulars, and they only resembled one another in all having been mistaken for abscess.

In the first case, the case of aneurism in the upper part of the thigh occurring rather rapidly in an old man, the tumour fortunately had not been punctured; it had only been poulticed; and the aneurism was sufficiently below Pouparts ligament to admit of the ligature of the external iliac artery above Pouparts ligament with every prospect of success; and therefore, although the aneurism had been mistaken for abscess, yet the ultimate and fatal termination of that mistake, the puncture of the sac, had not actually occurred, and there was therefore no reason whatever to depart from the usual treatment of such cases—viz., the performance of the Hunterian operation, the ligature of the artery at a distance above the sac, and that was accordingly done. The patient died some weeks after the operation, not directly from the operation itself, not from secondary hæmorrhage at the site of the ligature, not from suppuration of the tumour, not from anything connected therefore with the aneurism or the ligature, but from one of those more remote conditions that are common to all operations in surgery—viz., the development of pyæmia. So far, therefore, as the condition of the artery was concerned, there was no reason to depart in this case from the ordinary treatment of aneurism. So far as the result of the operation was concerned, there was no reason to regret the operation that was performed, inasmuch as the operation itself was successful, the patient dying of an intercurrent constitutional condition that might be looked upon as an accidental complication.

In the second case, the one that occurred last autumn, also an aneurism of the upper part of the thigh mistaken for an abscess, a very different method of treatment was adopted; for after a consultation between Mr. Heath and myself, it was agreed that we should lay open the sac—should perform the old operation for aneurism. Now why was a different method of treatment adopted in this case from that which I had recourse to in the first, although the situation of the tumour in the two cases was very similar? For this reason, that the aneurism had already been punctured, and blood had escaped from it. I think you may lay it down as a rule in surgery, that when an aneurismal tumour has once been punctured, or in any way opened, whether accidentally or purposely, it is useless to ligature the artery leading to the sac; that you must lay open the sac, and ligature the artery on either side of the aperture in it. This, gentlemen, is a very easy thing to advise to be done, and it sounds a very easy thing to do; but I can assure you that there are very few operations in surgery that are more difficult than, in many cases, is this operation of laying open the aneurismal sac, sponging out its contents, and ligaturing the artery on either side of the opening communicating with the sac. Any surgeon who has had occasion, as I have had, to perform the operation which Mr. Heath performed in this case, will agree with me that it is by no means an easy one in a very great number of cases, where you have to do with a large aneurism full of coagulum, connected with an important vessel, and deeply seated.

Now in this operation there is one great danger and several difficulties. I will mention this danger and these difficulties, and I will tell you, so far as I can from my own experience, the best mode of overcoming them. The grea danger in this operation is that the patient may die of hæmorrhage before you can get the ligature round the artery. You lay open the sac, and, unless you are very careful, you may get a rush of arterial blood that you cannot arrest, and that may give rise to sudden syncope and death in the course of a very few seconds or minutes if you have to deal with a large artery. The first thing, therefore, in all these cases is to compress the artery above the aneurismal tumour. That, fortunately, you can now do in all cases of aneurism in the lower extremity. If the aneurism is anywhere low in the thigh, you can compress the femoral artery as it passes over the pubes; while if you have to do with an aneurism in the upper part of the thigh, by means of Lister's abdominal tourniquet, which we employed in this case, you can compress the abdominal aorta, and control the bleeding. Indeed, if I mistake not, Lister's abdominal tourniquet was invented in order to control the circulation through the abdominal aorta in a case of this kind which was operated on by Mr. Syme, of Edinburgh. But when you have to do with aneurism of this description—diffused aneurisms that have been opened, or in which it becomes necessary to perform the old operation of laying open the aneurismal sac—in the upper part of the body, at the root of the neck, or in the axilla, you cannot compress the artery leading to the tumour, and therefore you have a condition of very great difficulty and of very great danger In these cases the proper plan undoubtedly is to adopt the very practical recommendation that has been made by Mr. Syme, and put in practice by him—namely, to make a small opening into the tumour, an opening just sufficient to enable you to insinuate your fingers, and so to work your whole hand gradually into the tumour in that way, so that the entrance of the hand may plug up the opening in the sac; to feel with your fingers for the opening into the artery, and to get your fingers against that, so as to restrain the flow of blood from it, before the rest of the sac is laid open, and not to lay open the sac until the fingers are fairly pressed upon and into the opening in the artery, and so to restrain the flow of blood from that opening whilst the rest of the sac is being freely laid open. In that way, then, you overcome the great danger in these cases, the danger of death from hæmorrhage during the operation which would infallibly occur if you were to lay open the sac freely without adopting one or both of these precautions.

Now for the *difficulties* of the operation. The hæmorrhage having been completely arrested, by compression of the artery above the tumour, or by pressure of the fingers at the opening leading into the tumour, you lay it open freely and completely, turn out the coagula, and sponge away any dark or fluid blood that may be there. You then open the interior of the aneurism. But what is that interior? It is not the interior of a smooth sac, but it is a large ragged cavity, with masses of coagulum or solid fibrin sticking to it in different directions, with the remains perhaps of an old sacculated aneurism at the bottom, with a quantity of plastic matter infiltrating the tissues around it, with the anatomical relation of the parts utterly and completely disturbed and destroyed by the pressure of the tumour and the infiltration with coagulated blood, with great thickening and solidification of parts around from the pressure to which they have been subjected in consequence of the effusion of plastic matter. So you have a large cavity with an opening at the bottom of it, the opening leading to the artery somewhere or other, but the position of that artery more or less disturbed, more or less masked and obscured by these masses of coagulum, by this plastic infiltration, by this thickening and cohesion of the tissues to one another around it.

The next thing is to pass the ligature around the artery. Now the artery does not lie exposed in this sac: quite the contrary. You have to scrape or to dissect or to cut through the posterior wall of this sac, which always overlies the artery. That constitutes the great difficulty of the operation—to open up this posterior wall in a proper direction, and to get the aneurism-needle round the part without wounding the contiguous vein, or transfixing the artery, or doing damage to the neighboring parts. The best way of doing that undoubtedly is the plan we adopted eventually in this case, and which has been adopted with advantage in similar cases by other surgeons —viz., to introduce a large steel probe or a metallic bougie into the opening into the artery, and to use that as a guide to the situation of the vessel. You may use a large one, so as to plug up the opening. In one case of this kind on which Mr. Birkett, of Guy's Hospital, I believe, operated, he introduced a large bougie, and used that as a guide for the application of the ligature round the vessel. By this method you undoubtedly overcome, to a great extent, this difficulty, which is really very considerable. You then clear the vessel as well as you can—the coats are generally thickened and diseased in the vicinity of the aneurismal tumour,—and you pass a good double ligature round it. You pass a ligature round it on each side of the opening in this vessel, because you are very apt to get regurgitant blood, which will cause secondary hæmorrhage from the lower end of the vessel, if you only ligature the vessel above the opening. In these cases, indeed, you must treat the condition of things exactly as if you were dealing with a traumatic aneurism with a wounded artery. You must apply the ligature both above and below the opening in the vessel.

We now come to the third case, that of popliteal aneurism, in which I amputated the thigh. Why did I treat it in that manner? Well, in this case, the choice lay between laying open the aneurismal tumour (the old operation) and amputation. I preferred amputation because the man was in a very exhausted state from the loss of blood which had occurred in consequence of the puncture of the tumour; and I was afraid if I endeavored to lay open the aneurismal tumour, that we should get more or less hæmorrhage during the operation, that the operation would be a prolonged one, that there would be profuse suppuration, and I thought that the patient would stand a much greater chance if the limb were amputated. Accordingly I had recourse to amputation here, and the patient made a satisfactory recovery. There was no drawback of any kind.

Thus, then, you will have seen that three cases of aneurism mistaken for abscess required different methods of treatment, and I have described to you the reasons which led to the adoption of the different operations in each case.

There are yet three more cases of aneurism to which I wish to direct your attention.

Case 4.—The first of these is a case of popliteal aneurism, which, in undergoing spontaneous cure, gave rise to gangrene of the foot—a very unusual occurrence. The history of the case is briefly this.

George S——, aged sixty-three, was admitted April 29th, 1867. He states that on April 26th he suffered from a severe pain in the left knee. The toes subsequently became numb. Next morning he noticed a black spot, the size of a threepenny piece, below the outer malleolus. The day before admission he noticed a brown patch on the outer surface of the middle of the leg, and some mottling of the foot. On admission there was evidently gangrene of left foot, involving the toes, and extending some little distance up the foot. The gangrene was moist rather than dry, and did not resemble gangrena senilis. It looked very much like the gangrene sometimes associated with embolism, where an artery suddenly becomes plugged up by a clot of fibrin in the circulation, and that was the view I first took of the case. Some days after, however, on examining the limb, a tumour was detected in the left popliteal space, the size of a duck's egg, and hard. The patient was perfectly unaware of the existence of this. On examination it was evident that it was a popliteal aneurism in a state of solidification; in fact, that it was undergoing spontaneous cure. There was no pulsation or bruit in it, and its bulk did not diminish on compressing the femoral. On May 18th the discoloration had extended above the ankle, and the toes and sole of the foot were denuded of cuticle. Under these circumstances, as the gangrene was extensive, and a line of demarcation had formed, the proper plan was, of course, to amputate. This was accordingly done on May 20th, above the aneurism, at the lower part of the thigh. The patient, being advanced in years, made rather a slow recovery, but eventually did well.

On examination of the aneurismal tumour it was found, as was expected that it was an aneurism of the popliteal artery in a state of solidification. The popliteal vein was implicated in the tumour, and there could be no doubt that it was in consequence of this implication of the vein that gangrene occurred.

The following is the account of the dissection of the case, made by Mr. Bruce:—On examination of the limb after removal, it was found that an aneurism existed in the ham, situated at the lower part of the popliteal artery, at its division into the tibials. It was oval in form, measuring 2⅜ inches in length and 1⅞ in breadth. Springing by a very broad base from the superficial side of the artery, it overhung the continuation of the vessel both above and below, and thus exercised a very considerable amount of pressure upon it. The popliteal vein was completely incorporated with the outer wall of the sac, and, in consequence of the pressure exerted upon it by the tumour, its cavity was in great part obliterated, the superficial and deep veins of the leg being enormously distended, and partially occluded by coagula. The deep tibial veins were so large and tortuous as completely to conceal the artery, which was found, however on examination to be completely occluded by a thrombus throughout its whole extent. The anterior tibial was free, except at its origin, where it became implicated in the tumour. The popliteal artery was occupied, for the space of one inch, by a decolorised firm coagulum, which terminated above in a conical extremity at the origin of one of the articular branches. On making a section of the aneurism it was found that a deposit of laminated fibrin occupied the outer two-thirds of its cavity, being deposited with great regularity around the wall; the remaining central third, however, which was in more direct communication with the vessel, was filled with an ordinary loose coagulum. The black coagulum extended into the posterior tibial, which completely occluded, and into the anterior tibial for about a quarter of an inch. The sac of the aneurism was of moderate thickness and of very considerable strength, consisting chiefly of the outer and middle coats of the vessel greatly thickened; it was impossible to determine whether the internal coat entered into the formation of the walls of the sac. The walls of the vessel both above and below the aneurism appeared perfectly healthy.

Now, here you will observe was a case of popliteal aneurism, in which nature was endeavoring to effect a permanent cure by the solidification of the tumour, and in which that cure was interfered with in consequence of gangrene of the limb setting in.

Gangrene of the limb, as a consequence of the solidification of an aneurismal tumour by its spontaneous cure, is certainly a very rare occurrence; and it can probably only occur in those cases in which the vein, being more or less compressed by the aneurismal tumour, has become implicated in its walls, and the compression is sufficient to interfere with the return of blood through the vessel. The limb may thus fall into a state of moist gangrene. That is the state of affairs which existed in this particular instance.

In order to finish the cases of aneurism, there are two others to which I may very briefly refer.

Case 5.—One is that of a man of the name of F——, fifty eight years of age, a gardener, who was sent up from Penzance, and was admitted on the 10th of March, 1868. About three months before admission he first noticed some stiffness of the limb in walking, and soon after some pain on movement and pressure, greatest about the calf. This continued, and five weeks before admission he first observed a small throbbing tumour in the ham. This tumour steadily increased in size to the time he was admitted into the hospital, when a popliteal aneurism was found to exist in the right ham, about the size of an orange. The tumour presented all the characteristic signs of aneurism.

In this case the treatment employed was a mixture of flexion and compression: the leg was bent upon the thigh, and Carte's compressor applied at the same time to the upper part of the thigh. This was commenced on March 10th. He bore the compression badly at first, becoming irritable and restless, and complaining of a good deal of pain. It was, however, kept up from time to time, though it had frequently to be relaxed for several hours at a time, in consequence of his inabilty to sleep whilst it was maintained. The tumour was found to be solidified at nine o'clock on March 14th, about eighty-four hours from the commencement of the treatment; but it was only during forty hours or so that the treatment had been kept up with anything like persistence.

I merely mention this case as an instance of the ordinary treatment of a simple case of popliteal aneurism by compression. There is nothing unusual about it in any shape or way. The man did not bear the compression very well, and it was a little longer, perhaps, in exercising its influence than it otherwise would have been. The time which elapses before the compression is effectual varies immensely in different cases—from a few hours to many days, and perhaps, in some cases, several weeks. It is very difficult to say on what that difference depends. I believe, if I recollect rightly, one of the shortest cases, if not the shortest, in which it has been successful, occurred in the practice of Dr. Mapother, of Dublin, who treated a case of femoral aneurism successfully by compression, and in four hours and a half the the tumour became solid. I believe that it depends greatly upon whether the tumour is approaching a natural process of solidification or not; upon the amount of laminated fibrin in it, and the state of the blood. When you have a tumour in which laminated fibrin is already formed to a certain extent, which is making an approach, an attempt, as it were, to spontaneous cure, you can easily understand that compression exercised—whether it be digital, whether it be by flexion, or by an instrument—for a few hours, may perfect the cure. In the other cases, where there is no attempt at the deposition of fibrin, where the whole contents of the tumour consist of fluid blood, and where the blood itself is not in a favorable state for solidification, compression of course may be, and necessarily will be, very much longer in effecting a good result.

I may mention, in connexion with compression, that of late years, especially owing to a case that occurred to a late pupil of this College, Dr. Murray, of Newcastle-on-Tyne, in which he successfully treated a case of aneurism of the abdominal aorta by continuous compression, kept up for many hours under chloroform, that operation has come into practice, and has been attended with the most beneficial results. The patient is placed under the influence of chloroform, and the pressure maintained continuously for several hours.

Case 6.—The last case of aneurism to which I wish to direct your attention is one that is still in the hospital, and which I have already brought before your notice on former occasions. It is the case of an old man in ward No. 1, with an enormous axillary aneurism. He is upwards of seventy-eight years of age, and the immense axillary aneurism from which he is now suffering has been slowly coming on for more than four years. In this case we have tried compression, both digital, upon the subclavian above the clavicle, and directly upon the tumour, but without any avail. The patient could not bear the compression, and no good resulted from it. The question then was what course of treatment should be adopted? The only one which suggested itself was, either to tie the artery above the clavicle, or to lay open the tumour and tie the artery where it communicated with the tumour. With regard to tying the artery above the clavicle, the objection to that plan of treatment was that the disease appears to extend higher up. The artery above the clavicle is much dilated; there is a very clear vibratory thrill through it, and it is evidently not in a condition to bear the ligature. With regard to laying open the tumour and ligaturing the artery on either side of the opening communicating with it, the objection to this is that the operation would be an excessively severe one; that we should have to deal with a portion of an artery which is clearly unhealthy, inasmuch as the unhealthy state of the artery extends to some distance above the clavicle, and how much beyond this it is impossible to say; and that the patient's age is so advanced that it could not, in reason, be expected that he would bear any serious operation —in fact, that he would not bear either of the operations that I have just mentioned, the more so as he has had several attacks of syncope since his admission into the hospital, looking as if he had some dilatation of the aorta, or some cardiac mischief as well. Under these circumstances, we have thought that the best plan would be to keep him as quiet as possible, to regulate his diet, and to allow the disease to take its course, which it necessarily must do, no operative plan of treatment offering any prospect of a satisfactory result.

These cases of aneurism, gentlemen, which I have brought under your notice to-day are, as you may see, extremely interesting. Each has some important points in which it differs from the others, and all are deserving of attentive consideration and study.

[Since this lecture was delivered the patient died from rupture of the sac. A careful dissection was made of the right subclavian and axillary regions. The pectoral muscles were both in their positions, and not displaced by the tumour, the mass of the tumour projecting below the lower edge of the pectoralis major. On reflecting these, the anterior surface of the sac of the aneurism came into view. The tumour was wedged in, as if it were between the first three ribs and the scapula, and was closely adherent to the soft structures investing those bones. The sac had been ruptured, ante-mortem, in two situations—one at its lower surface, and from this a large quantity of blood had escaped into the loose cellular tissue beneath the latissimus dorsi, forming a clot that weighed more than a pound; the other on the axillary surface, beneath the ecchymosis that had been noticed during life. The aneurism was found to spring from the part of the artery below the pectoralis minor, the neck of the aneurismal sac occupying about two inches of the inner wall of the vessel. From this the sac extended upwards as high as the clavicle, inwards to the first three ribs, and as low as the level of the fifth; and backwards to the serratus magnus, which was tightly stretched over it. Towards the arm three considerable vessels emerged from the tumour, two brachials, and the superior profunda, apparently. The subclavian was widely dilated throughout, but narrowing somewhat as it was traced to the innominate. The branches of the subclavian were all healthy and regular. The condition of the subclavian which had been diagnosed during life, was thus confirmed after death, and would have rendered any operation impracticable.]

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.,

LECTURE I.

Gentlemen,—Orthopædic surgery embraces deformities of the trunk, neck, and extremities. Those deformities which arise during embryonic or fœtal life exist at birth, and are therefore termed *congenital;* whereas *non-congenital* deformities are acquired at any subsequent period of life.

I propose to call your attention in the first place to the *causes of congenital deformities;* secondly, to consider the *causes of non-congenital deformities;* and, thirdly, to bring under your notice the *causes and modes of development of certain affections of the osseous system.*

The *causes of congenital deformities* are, especially, *arrest of development* and *spasmodic action.*

Arrest of development will occasion deformity, or even monstrosity; occurring as it may in a limb whilst growth elsewhere proceeds in a normal manner. Thus, if in the embryo growth be arrested, and this condition of parts be continued in the fœtus, it becomes monstrosity. For instance, a hand without fingers, or a foot without toes, would represent according to Wagner, the conditions of those parts of the embryo at the seventh week of development. Now, should arrest of development take place in these parts at this period of existence, a form, which in the normal condition is transient only and confined to embryonic life, becomes, if continued monstrosity in the child. It has further been shown by Wagner that up to the fourth or fifth month, or even later, the embryo presents a club-footed appearance. Should arrest of development occur at this period, so that the muscles on the inner side of the limb (say the abductors of the foot) cease to be developed in proportion to the rest of the limb the condition now alluded to—the normal condition of the feet at this period—necessarily remains, and, as regards the affected muscles, development at birth is imperfect, and the feet still continue, as in the embryo, clubbed.

Spasmodic action is, however, without doubt, the most frequent cause of congenital deformities which depend on muscular action. This spasm may be clonic, or it may be of a more permanent character. It is due to irritation; and whether this irritation be occasioned by dentition, by intestinal worms, or other cause, it may give rise to club-foot, club-hand, wry-neck, squinting, or other deformity. In explanation of the last sentence, I may remark that intestinal worms are known to exist in the fœtus; and, also, I may quote the following words from a paper read by the late Dr. Marshall Hall before the Medical Society of London: "The age of convulsive diseases is specially that of dentition, and of what I may term dubious diet. Dentition, as I understand the term, begins at birth, or even before. It is then that the tissues of the alveolar processes and cavities become the seat of augmented vascular action and nervous excitement, which do not cease until dentition is completed. I think it probable that many convulsive affections and their dire effects have their origin in utero; certainly many of the latter are congenital."

But spasmodic action, however excited, may be transitory: the spasm then subsides, and a healthy condition results; and the effects which are produced on the fœtus are much less severe than when a similar spasmodic condition occurs after birth. It is not uncommon, however, that a partial recovery alone shall take place, and that after birth the child shall continue subject to spasmodic movements, the limbs not being entirely under the control of the will. Should irritation be persistent, paralysis, together with degeneration of the affected muscles, may probably ensue.

Again, in the anencephalic monster every known form of distortion may exist, as well as luxations, whether complete or incomplete Also, together with hydrocephalus and hydrorachis, the same distortions are met with. There is no known form of distortion that does not occur with lesions such as these.

During fœtal life growth is remarkably rapid. Now, should spasm continue during a short period only, so that one set of muscles remains more or less contracted, their antagonists will be in an equal degree elongated and weakened, and the growth of the contracted muscles will not be in proportion to the rest of the limb. They are then said to have undergone *congenital structural shortening.*

Like other nervous affections, congenital deformities are hereditary. For instance, five boys in one family came under my care for congenital talipes varus, their father, uncle, and paternal grandfather having likewise suffered from similar forms of distortion. In each generation females were added to this family, but none of them were deformed at birth. I have lately also seen another family of four children, two boys and two girls, all of whom were club-footed at birth; their mother also was club-footed, Dr. Little, speaking of talipes varus, says: "I have traced it on the paternal side even through four generations—namely, the male infant, the father, the grandfather and the great-grandfather." Mr. Wm. Adams, also, relates the case of a man who was born with double talipes varus. This individual had thirteen children by one wife five of whom were club-footed, three boys and two girls. In four of these children both feet were affected. The eldest of these children at nineteen years of age gave birth to a club-footed child. Also a cousin of these thirteen children was born with talipes varus. Again, Mr. Tamplin mentions that eight children in one family were born with double varus. In this instance, however, it is not mentioned that the parents were in any way deformed, and therefore this cannot be considered as an instance of hereditary origin, although it is scarcely less interesting than if it were so.

It is believed by some that intra-uterine pressure may be the cause of congenital deformities. It should be remembered, however, that at an early period of gestation the embryo floats in the liquor amnii, and that as utero-gestation advances, and the fœtus becomes bent upon itself, the fluid which surrounds the fœtus prevents injurious pressure of the uterus, and enables those movements to take place which, indeed, become stronger and more marked until the period of gestation is completed. I have made use of the term "pressure of the uterus," but it is misapplied; for in its passive state, and until labor commences the uterus exercises no pressure on the fœtus, but yields to every movement from within; and it is only when this passive condition is exchanged for one of action, to expel its contents, that the uterus exercises direct pressure on the fœtus. It is therefore impossible that the uterus should produce such pressure upon the fœtus during gestation as to induce deformity. We may consequently discard this notion, and re-assert that the causes of congenital deformities are, especially, arrest of development and spasmodic action.

The *causes of non-congenital deformities* are various. Here, again, as in congenital deformities, irritation of the nervous system is the prevailing cause. But, also, local inflammation and debility are very frequent causes of non-congenital distortions.

During infancy spasmodic action is very frequently occasioned by dental and by intestinal irritation. Indeed, irritation of the sympathetic system of nerves through the errors of diet, worms in the alimentary canal, retained feculent matter, &c., is often seen to give rise to spasm and convulsions. These forms of irritation are common during infancy, and they constitute at this period the most frequent causes of spasm and of paralysis. Other causes of cerebral congestion and irritation of the spinal system of nerves exist, such as exposure to the sun's rays, the incubation of the exanthemata, a renal calculus, an insufficiently strangulated nævus; and, indeed, there is scarcely a condition of body that can be named, apart from health, in which convulsions may not be induced. Carpo-pedal spasm may exist without cerebral disturbance; but when irritation is continued, convulsions follow, with, perhaps, paralysis or death.

Spasmodic action is sometimes caused by pressure upon the head of the infant during birth. The deformities which arise from this cause are doubtless frequently not distinguished from those which have been previously alluded to as congenital distortions. But it should be fully understood that tonic rigidity of a limb or a pair of limbs (for the most part the lower limbs) or of the entire voluntary muscular system, results from some injury at birth, such as sustained by the brain and the brain-case, or by the vertebræ and the spinal cord, by too much force in the application of instruments, or, without instrumental interference, when much violence is used, with or without deformity and contraction of the pelvis. In these cases the flexors and the adductors of the thighs, the flexors of the legs, and the extensors of the feet, are for the most part affected. The upper limbs are usually less affected than the lower, yet the elbows will probably be found partially flexed, the forearms pronated, and the fingers wanting in power. The muscles of the neck also in these cases are deficient in power, and unable to support the head, so that the head rolls from side to side, and falls on to the breast or backwards. In the same manner the muscles of the trunk participate in the general weakness, and the child is in consequence unable to sit upright. In children thus affected there is also occasional or constant strabismus, and often the muscles of speech are involved: in some a cry only can be uttered, in others a syllable, while in others violent stuttering will be induced on the slightest provocation, or almost without apparent excitement. Thus, a single muscle, or a set of muscles, or the entire voluntary muscular system, may be affected, and endless varieties of deformity are produced.

Such, then, are the forms in which spastic contractions are seen during infancy. Together with these spastic conditions of arms and legs, there will probably be found abnormal conditions of feet and hands; indeed, every known form of talipes and cheirismus is to be found together with these rigid limbs.

When convulsive action has once been developed, spastic contraction may ensue, or a limb may be wholly or partially paralysed. The countenance of the child usually indicates the presence of cerebral disturbance: there is a vacancy of expression, and the child remains dull and listless, or otherwise it is excited. These children are, however, frequently more intelligent than a casual observer might suppose. Frequently the memory is good and the mind active (although always more or less morbidly excited), notwithstanding that the fingers and feet are almost, if not quite, useless.

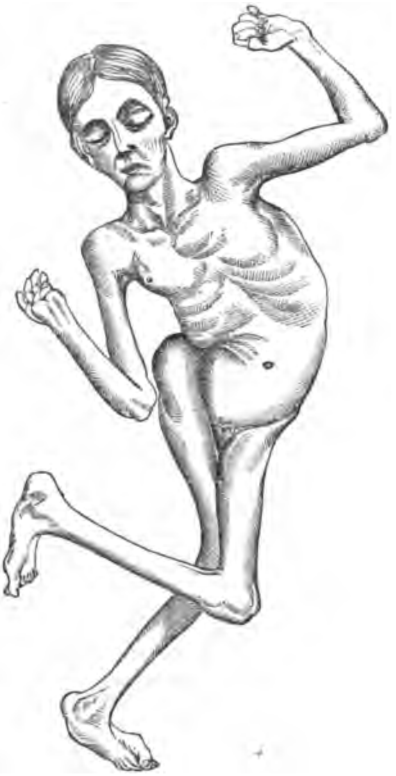
Spasm of one limb, and paralysis of the opposite limb, may be observed. Spasm usually is first developed in the upper, and later in the lower, extremities. It is often stated otherwise; but observation shows that in spasm the lower limb recovers power sooner than the upper; but that, when paralysed, the upper extremity usually first recovers power.

After a succession of slight convulsive attacks, certain muscles remain, perhaps, rigid; the most powerful being the most affected, or appearing to be most affected. Thus the thighs are more or less flexed, and the knees are approximated; or even the legs are crossed one over the other, and maintained so firmly in this position that considerable force may be inadequate to separate them: the legs are flexed, and, the feet are extended and inverted. Also, the arms are bound to the sides, the forearms are flexed, the hands are prone, and the fingers are flexed. Every form of squinting may be observed together with these rigid muscles; and, indeed, every voluntary muscle may equally be subject to this spasmodic action.

As has already been said, this state of spastic rigidity may pass into paralysis. In the cast which I now show you (a cast in St. George's Hospital museum), there is represented almost every possible deformity to which spastic rigidity can give rise. Disease in this case was developed in infancy, and was continued with increase and mitigation until death, which occurred at twenty-five years of age. Any drawing can only give a a very imperfect idea of the case: the accompanying woodcut was made by Mr. Bagg from the cast. Here are seen talipes varus, talipes valgus, contractions of the knees, hips, elbows, wrists, fingers, and toes, wry-neck, and lateral curvature of the spine.

Again, in the adult, affections of the sexual and the urinary organs occasion disorders of the brain and spinal cord, and give rise to deformities such as I have to bring under your notice. Thus hysteria occasions spasmodic contraction. You will remember such a case in Wright's ward. Jemima U——, a remarkable stout person, twenty years of age, had been affected with spasmodic varus for three years before she was admitted into the hospital. Splints and medical treatment were tried ineffectually; and it was then determined to divide the tendons. You will remember how the inversion of the foot was immediately removed on dividing the tibialis posticus tendon, the antagonistic muscles being allowed for a moment to act upon the foot. Subsequently the tendo Achillis was divided and in six weeks the patient left the hospital perfectly cured. We see her occasionally here, and are able to observe that there has been no return of deformity. In cases such as this there has possibly existed some congestion of the spinal cord, which having subsided leaves the deformity as a local affection, dependent alone on structural shortening of the affected muscles. But not only may a hand, or a foot, or an arm, or a leg be thus affected; but one side of the body or the entire muscular system may be involved.

Fig. 1.



Paralysis presents itself especially in three forms—namely, that which arises from organic change in the nervous centres; that which is known as myogenic paralysis, or the essential paralysis of infants; and paralysis from traumatic lesion of nerve-trunks.

Paralysis, whether hemiplegia or paraplegia, is observed at every age as a consequence of organic change. During infancy, paralysis not unfrequently occurs without evident cerebral disturbance, perhaps during sleep, or while a child is at play; often without previous indication to an ordinary observer, the child appearing to be in his usual state of health. Thus I lately saw three cases which seemed to commence as follows. A child was playing in his father's garden, when suddenly he lost the power of his lower limbs: he was paraplegic. Another child was observed to squint; an epileptic seizure followed soon after, which was succeeded by paralysis of both the upper and lower extremities. A third child was convulsed, and remained unconscious for several hours: in this case hemiplegia resulted. Now, whether deformity is occasioned by spasm or by paralysis, there is a certain amount of resemblance in the resulting distortion. For instance, paralysis of the right sterno-mastoid muscle will cause the muscle of the opposite side to contract upon itself, and draw the head down towards the shoulder of the same side, at the same time that the chin is rotated in the opposite direction. And spasmodic action of the sterno-mastoid muscle also occasions a similar distortion. Again, when the muscles on the anterior surface of the leg become paralysed, such as the tibialis anticus and the extensor longus digitorum, their antagonists—namely, the gastrocnemius and soleus, the tibialis posticus and flexor longus digitorum—gradually contract upon themselves, producing elevation of the heel with some inversion of the foot. And, as in the case to which I have already alluded, spasm of the extensors and the adductors of the foot produces a similar form of distortion, From long continuance in a contracted position, and a more or less unused condition of the muscles, structural shortening results; and ultimately fatty degeneration ensues, not of the paralysed muscles only, but also of those which are contracted.

In these case of paralysis, a single muscle may alone be affected or a group of muscles; or an entire limb may be deprived of power, or the power of one side may be lost, or both the upper and the lower extremities may be simultaneously paralysed. Florid children are, perhaps, scarcely less frequently the subjects of these attacks than those who are weak and ill-nourished.

Cerebral symptoms are, for the most part, preceded by spastic contractions. These premonitory symptoms—such, for instance, as squinting—are, however, frequently overlooked, or their importance is not understood. The cause of irritation is therefore not recognised, and irreparable mischief, which perhaps might have been warded off, is allowed to occur.

Paralysis of one side of the trunk always gives rise to lateral curvature of the spine, the healthy muscles acting upon the vertebral column and drawing it away from the mesial line of the trunk. The length of the spinal curve will depend both on the extent and degree of loss of muscular power: a single curve may be formed when paralysis is general on one side, or, when it is confined to two or three muscles, the trapezius and the rhomboidei for instance, the curve will be compensated by a second curve. In the same manner, after amputation of the arm, the muscles of the shoulder become atrophic and lose their power, whereupon those of the other shoulder, not being duly balanced, exercise undue power on the spinal column, and curve it in the direction of their combined forces.

Loss of the power of motion is, however, only one form of paralysis. Another and a somewhat more rare form is loss of sensation. This loss of sensation may occur in a patch of skin only, or both lower extremities may be affected, or it may be even more general. When loss of sensation is partial and incomplete, walking is accomplished in a clumsy and awkward manner, with some support, such as a couple of sticks, or an arm; but should such a patient close his eyes while standing, he would probably drop to the ground. The limbs cannot be guided without the help of the eye, and the ground is felt imperfectly, and is not grasped, if one may say so, by the foot. This form of paralysis passes on rapidly, in many instances to extinction of sensation.

Infantile paralysis, or essential paralysis of infants, or myogenic paralysis, is very common during infancy, and it rarely occurs except at this period. It takes place without appreciable nervous lesion. After paralysis has existed for some considerable time, however, atrophy of the nerves which are supplied to the paralysed muscles takes place. Sensation is seldom impaired, but the power of motion is more or less lost. This form of paralysis usually occurs before two years of age, and it is caused for the most part by exposure to cold, such as is occasioned by throwing off the bed-clothes during sleep, through sitting on a stone seat, or other like cause. This loss of power usually occurs without pain; not unfrequently, however, there is febrile disturbance and acute pain, so that the child cannot bear the affected limbs to be touched. Perhaps, the extensors of the leg and the flexors of the foot are more frequently affected than any other groups of muscles in this form of paralysis. I have lately seen a case in which, in addition to the extensors of both legs and the flexors of both feet, the deltoidei, the trapezii, and the rhomboidei were paralysed. With care in the commencement of the attack these cases of myogenic paralysis usually yield rapidly to treatment, and recovery of muscular power is then for the most part complete. When they are neglected, however, paralysis continues, and contractions with deformity result.

Traumatic lesion of nerve-trunks is a rare case of distortion. I have known talipes calcaneus to be produced by the removal of a portion of the internal popliteal nerve, together with a tumour from the ham; and gunshot wounds occasionally give rise to somewhat similar results. Such lesions are seldom remediable. Fortunately they occur but seldom.

Besides the causes already mentioned inflammation and debility are common sources of noncongenital deformities.

Inflammation.—In the entire category of deformities to which I shall have to call your attention none is more frightful to witness than that which results from a severe burn. The chin is bound down perhaps upon the breast, as in Mr. Henry Lee's case in Wright's ward. Or, not unfrequently where destruction of the integument is somewhat more extensive, and consequently where contraction is somewhat greater, the lower lip is drawn down to its utmost limit. The saliva cannot then be retained, the teeth are forced outwards, and the aspect is rendered even more hideous than in the former case. Loss of substance, where the destruction of integument is considerable, especially from burns, is followed by contraction and deformity; but the amount of deformity depends rather on the position than on the extent of the injury. Burns of the neck produce perhaps the greatest amount of deformity, for contraction takes place with cicatrisation, and even after cicatrisation is complete; and although the face itself may not have been touched with fire, the mouth being drawn down and the eyelids drawn down, the resulting deformity is very great. With the greatest care and attention, it is in many instances, impossible to prevent deformity; yet something may always be done to prevent the terrible results to which allusion has now been made: and if contraction has taken place the deformity may yet be remedied whilst the cicatrix is recent. You will remember among the out-patients, S. B——, aged sixty, who had been burnt extensively on the back and breast and in the axilla, and whose arm was bound down to her side by adhesions, so that she had no power to move it from her side, nor to raise her hand; and you will remember how, by gradual extension she not only entirely regained the use ef her arm, but the web which had formed entirely disappeared.

Again, a chilblain, or an ulcer, in healing may occasion adhesions to form, which restrict motion and produce deformity. The muscles of the calf of the leg are more frequently affected than others in this manner. Incised and punctured wounds when they occasion suppurative inflammation, and gunshot wounds through the destruction of tissues, also give rise to various deformities. And I must not omit to mention the viper-bite; for although we rarely see any ill effects produced in this country, yet you have lately seen a notable nstance in a patient in Grosvenor ward, who, having been bitten by one of these creatures, suffered frcm inflammation in several joints, which resulted in anchylosis; as well as from contraction of the gastrocnemii, which necessitated the subcutaneous section of the tendons.

Rheumatic inflammation, especially of the structures in the sole of the foot and in the palm of the hand, is of every-day occurrence. The fingers are drawn down into the palm of the hand, and the plantar fascia becomes thickened and contracted. But, also, rheumatic and other forms of inflammation produce an extensive series of deformities through the disorganisations to which they give rise in the various articulations, occasioning permanent muscular contractions, with perhaps partial anchylosis. Complete anchylosis is the result of more entire disorganisation; it is, however, rare.

Debility is among the most common causes of deformity. Hence are produced flat foot, knock-knee, and curvature of the spine. Those who are compelled to stand for many successive hours, such as compositors, errand-boys, &c., are liable to contract this painful affection, the plantar ligaments yielding, and permitting the arches of the feet to sink. And in a similar manner the internal lateral ligament of the knee-joint yields, while the outer hamstring becomes tense, and knock-knee results. Again, during convalescence, and while growth is rapid, lateral curvature of the spine is very common. Thus a weakly child if it be treated as a stronger companion, will probably acquire some irregularity of form; but the particular form will depend on the habits of the child. Let us suppose that, through standing or walking much, flat foot has been induced (and this is an affection very frequently met with in children); a sense of weakness in the limb is caused by the loss of the arch of the foot, the child stands more on one foot than on the other, knock-knee is in consequence superadded, and necessarily the pelvis then becomes oblique. But an oblique pelvis must occasion curvature of the spine.

In infancy posterior curvature of the spine is induced by debility. The muscles of the back not having sufficient power to support the head and trunk, the head falls forward on to the breast and the spine is curved forward in its entire length. Also in youth and in old age a stoop is induced by a similar cause.

The affections of the osseous system into which I have to inquire are rickets and scrofula.

Rickets.—In consequence of the derivation of the term rickets it is commonly supposed that this disease affects especially the vertebral column. It is an error, however, to suppose that rickets frequently affects the spine. Sir Benjamin Brodie, in his lectures on Curvatures of the Spine which were delivered in the theatre of this hospital, said, "It was the prevailing opinion formerly, and I believe that some hold the opinion still, that the common cause of a lateral curvature of the spine is a rickety condition of the bones. This view of the pathology of the disease is not confirmed by the specimens preserved in the museums of morbid anatomy; and no one who has seen much of these cases in the living person can doubt that the fact is otherwise. We are not, therefore, justified in regarding rickets as the common, or even as a frequent, cause of spinal curvature; nevertheless, it is the cause of it in a few instances."

Rickets is seen not uncommonly at birth. Occasionally it occurs with some deficiency, as of one or more toes, with their corresponding metatarsal bones, or of fingers, with, perhaps, clefts through the palm to the carpus. Together with these abnormalities, partial displacement of an articular surface, as the knee, and talipes in some form, may perhaps exist. Also, in these cases of congenital rickets it is not uncommon to find a peculiar and sharp projection of the tibia: so sharp, indeed, is the projection sometimes, that it appears almost as though the bone had been broken. There is also a corresponding indentation of the skin, as though it had been punctured. The softened bone is bent sharply, and the skin is thereby injured, and becomes more or less adherent to the periosteum.

Rickets is rarely developed in the infant while it is being suckled by its mother—that is to say, whilst it is well fed and warmly clothed, except it be at the same time fed with vegetable or other indigestable matter. Rickets is a general disease and not a disease of the skeleton only, and it abounds in all large and ill-fed communities. It is the result of poverty, bad food, and worse ventilation and drainage. Rickets is, for the most part, developed between the sixth and the eighteenth month, and it is seldom known to attack after puberty. I have observed and tabulated 500 cases of this disease, and I find that female children are attacked considerably in excess of the males, and also that the bones appear to be more extensively affected than in male children. Thus of 28 cases of deformity of the pelvis, 2 only occurred in males. The following is the table which I have constructed to show the periods at which rickets commences:—

At birth	26	
Between the second and the sixth month	16	
Between the sixth and the twelfth month	229	—271
In the course of the second year...	134	
" " third year	43	
" " fourth year	26	
" " fifth year	15	
From the sixth to the twelfth year	11	—229
		500

Of these cases 326 were females and 174 were males.

From this table it will be seen that a large majority of cases of rickets occurs before the first year is complete.

When the disease has shown itself early, the child is languid and unable to stand. He then moves about on the floor in a sitting posture, and bends the arm bones by leaning on them; and in crawling the leg bones are curved above the malleolus as he pushes himself along the floor, and this bowing of the leg bones is increased when he is able to stand and bear the weight of his body upon his feet.

In *Scrofula* tuberculous matter is deposited in the medullary cavities and in the cancellous structure of the bones. The cancelli become dilated, and are filled with exudation, which eventually breaks down; abscess forms, and necrosis follows, with ulceration of the articular cartilages. In this disease the bones become soft and spongy, charged with oily matter, and light in substance. Moreover the bloodvessels are increased in size, so that when meddled with, as for the removal of necrosed portions of bone, they bleed freely and often profusely. But notwithstanding that a scrofulous bone becomes light and thin, and is deprived of some of its salts of lime, it never becomes curved, as in rickets. In these circumstances, the main distinctions between scrofula and rickets are to be found—namely, that in scrofula inflammation passes on to produce abscess, while in rickets abscess is never produced in the course of the disease, but curvature and deformity result.

I shall have to recur to the subject of scrofulous affections when I come to consider angular curvature of the spine.

Original Papers.

STRUCTURE OF THE ADULT HUMAN VITREOUS HUMOR.

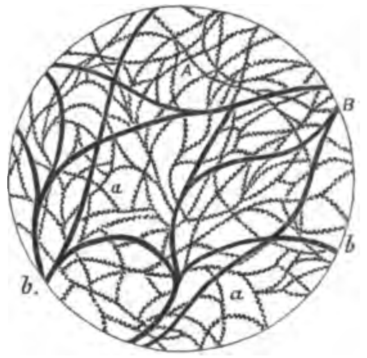
By David Smith, M.D., M.R.C.S.

The vitreous humor, constituting three-fourths of the globe of the eye, connects, both structurally and functionally, the crystalline lens and retina. It is enabled, by the union which subsists between its containing membrane in front—the zonula Zinni—and the ordinary processes, to bring the crystalline lens under the control of the ciliary muscle in adjusting vision to different distances. It is the part from which the eyeball chiefly derives its firmness and globular form. Having an intimate union with the vascular organ of the eyeball, the choroid, and its surface lying in direct apposition with the vascular network of the retina, any disturbance which takes place in the nutrition of the deeper structures of the eye will diminish the transparency of the vitreous humor, and, as a consequence, the perfection of the eye as an organ of vision. It has a structure peculiar to itself, and therefore must have its own diseases, if they were only known. In some of the most important operations on the eye for the restoration of vision, the soundness of the structure of the vitreous humor is essential to their success. The vitreous humor, performing thus such varied and important uses within the eye, and taking an active part in its healthy as well as in many of its morbid processes, a correct knowledge of its structure must be an indispensable acquisition both to the physiologist and the opthalmic surgeon. Nevertheless "its structure is unknown,"* according to one of the latest authorities, and until the appearance of the present publication has not been discovered.

Microscopic anatomy of the humor.—The almost perfect transparency of the vitreous body has all along been the chief impediment which anatomists have felt in investigating its structure. When it is examined in the fresh state nothing but a few processes and granules can be detected in it even with the highest magnifying power, and, therefore, no hope can be entertained of elucidating its structure without the assistance of reagents. Its minute structure may be demonstrated by removing a small fragment from the centre of the humor, (thereby avoiding any part of its containing envelope), and placing it on a glass slide, to which is then added a drop of concentrated alcohol. This has the effect of instantaneously rendering the tissue of the humor opaque. Thus treated and subjected to a low magnifying power, a network of reticular tissue is observed in the field of the microscope, dragged about in all directions from the commotion produced by the combination of the alcohol with the fluid of the humor. As this motion soon whips the delicate network of tissue into irregular ropy fibres, which no amount of maceration can again separate, it is necessary, in order to observe the structure more minutely, to cover it immediately after the addition of the alcohol with a thin pellicle of glass. Examined with a power of three hundred diameters the network of reticular tissue resolves itself into minute tubes or canals, intersected by cells at variable, but still very minute distances apart, thus establishing an anastomosis between cell and cell, as well as between the reticulations (Fig. 1 A). The tubes are about the size of the elements of connective tissue, and the cells about ten-thousandth of an inch in diameter.

No matter what part of the vitreous humor is examined the same structure is observed; but in and near the circumference of the humor, and particularly near the zone of Zimm, another set of fibres is superadded. These consist of strong, smooth fibres, not unlike the fibres of common fibrous tissue, which form a coarse, open web, in the large meshes of which the finer network of anastomosing cells is woven (Fig. 1 B). These fibres are evidently for the purpose of giving strength to the humor in these situations.

FIG. 1.



A *a a*. Anastomosing cellular tissue of the vitreous humor. B *b b*. Strong. Smooth fibres of the cortical portion of the vitreous humor. (Magnified 300 diameters.)

Design of the structure of the humor as a whole, as seen with the naked eye.—The tissue of the vitreous body is entirely composed of an open meshwork, and nothing in the shape of membranes can be seen in it with the microscope. But the microscopic examination of the vitreous humor in detached portions can convey no idea of the design of its structure as a whole; and, contrary therefore to what might be anticipated from microscopic observation, the strong fibrous tissue, which exists only towards the circumference of the vitreous body, is discovered by the naked eye to be woven into membranes or membraneous strata, having a determinate direction within the humor, while the anastomosing cellular tissue, on the other hand, occupies the intermembranous spaces in the manner of loose connective tissue.

To demonstrate these membranes and the intermembranous tissue in their relative situations, it is necessary to have recourse to another method than that already described, for the purpose of rendering the parts opaque as a whole, in order that they may be seen *in situ* with the naked eye. Of the methods which may be employed for this purpose, the one most conclusive and least likely to embarrass the observer, is that which allows the tissue to become opaque from age, a small quantity of preservative fluid being used merely to prevent it undergoing the process of putrefaction. To accomplish this, the eyeball should be allowed to stand four or five days in water, when it is to be divested of its tunics, and the vitreous body, with the crystalline lens and capsule, entire, placed in a solution of carbolic acid, of about the strength of one of the latter to three hundred of water. At this stage the vitreous humor is of a straw-yellow or greenish color, owing to the infiltration into it of the coloring matter of the blood, which somewhat masks the view of the fabric within; but in a few days the sanguineous coloring matter is disseminated into the surrounding menstruum, leaving the structure of the humour quite apparent to the naked eye.

---

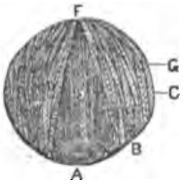
* Mackenzie: Outlines of Ophthalmology; 3rd edition, p. 40. Also consult—E. Brücke: Ueber den innern Bau des Glaskörpers, in Müller's Archiv, 1843, p. 345; and 1845, p. 130. Hannover: Entdeckung des Baus Glaskörpers, in Müller's Archiv, 1845, p. 467. Bowman's Lectures on the Parts concerned in the Operations on the Eye, p. 94. Kölliker's Manual of Human Histology (Sydenham Society's edition), vol. ii., p. 386. Carpenter's Human Physiology, 4th ed., p. 255. Quain's Anatomy, 7th ed.; by Wm. Sharpey, M.D., F.R.S., Allen Thomson, M.D., F.R.S., and John Cleland, M.D.; vol. ii., p. 731.

A vitreous body, having been prepared according to the previous directions, is to be placed in a wine-glass, or other eligible clear glass vessel, covered with water, and examined with the naked eye as the direct rays of the sun are condensed upon it by means of a convex lens. When so examined, the structures within the humor will be found to have the following arrangement:—

(*a*). Passing through the vitreous body from the point where the optic nerve pierces the eyeball to the posterior capsule of the crystalline lens, but inferiorly and internally to the axis of vision, is the hyaloid canal, which gave passage, in the embryonic eye, to the hyaloid vessels. It is not a constant structure of the adult vitreous humor, and in old age not a trace of it can be found. In some cases, however, it is not only present in the adult, but it remains patent through the whole of its extent, and in such cases, after the vitreous body has been macerated, is often seen to contain opaque granular matter, as if it still conveyed, during adult life, nutriment for the crystalline lens. The hyaloid canal has a diameter about that of a common probe, and, unlike the same structure in its primitive condition in the fœtus, it gives off no branches to the vitreous humor.

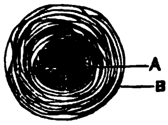
(*b*) Arising at right angles from, and surrounding the inner surface of the zonula Zinnii, are eight or ten membranous circles, placed the one within the other; each circle, on close examination, being seen to be made up of a series of segments, overlapping and uniting by their edges—the arrangement not being unlike the origin of the leaves of a leaf-bud from a circular disc. Proceeding from this origin, these membranes take a course backwards to the entrance of a hyaloid canal, and in their course split horizontally the entire circumference of the humor into innumerable shallow cells, placed with their flat surfaces to the hyaloid membrane, which build up layer upon layer, the sides of the vitreous body around the antero-posterior axis of the eye as a centre. (Figs. 2 and 3).

FIG. 2.



Arrangement of the membranous strata within the human vitreous humor (natural size). A, Crystaline lens. B, Zone of Zinn. C, Hyaloid membrane. D, Cortical portion of the humor. E, Medullary portion of the humor. F, Hyaloid canal. G, Radiating fibres.

FIG. 3.



Origin of the membranous strata from the zone of Zinn (natural size). A, Crystaline lens. B. Extreme border of zone.

These membranes are made up of the strong, smooth, fibrous elements already referred to under the microscopic examination of the humor. When they are examined individually with the naked eye by the aid of the direct rays of the sun, they are seen to consist of a flimsy network of fibres, which for want of a better name, I have called *membranes*, though they scarcely admit of being so classified; and though I have described as *cells* the compartments which the membranes enclose, they are incapable in any degree of limiting the fluid of the humor. The more superficial membranes, or those which take their origin from the extreme border of the zone of Zinn, have a coarser texture and web than those nearer the axis of the eye; and the former are also more bent in their course backwards, following the curve of the hyaloid membrane, in adaptation to the globular form of the vitreous body. In the vertex, or what may be called the medullary portion of the humor, I have not been able to detect any distinct membranous layers. Faint lines may usually be recognised running backwards in this situation; but they partake of none of the characters of a membrane. Moreover, the central parts are devoid of the strong fibrous tissue which forms the basis of the membranous strata of the cortical portion of the humor.

(*c*) As to the anastomosing cellular tissue, it occupies the medullary portion of the humor behind the crystaline lens and the spaces between the membranes, in the manner of intercellular tissue. It is woven into cellular spaces as receptacles for the vitreous fluid. The filaments of this tissue cross the short diameter of the intermembranous spaces, and therefore they have a radiating direction from the vertex to the sides of the vitreous body (Fig. 2); but, inasmuch as they are finer than the fibres of the membranous strata running from before backwards, they are not so apparent to the naked eye in the prepared specimen. In fact, the intermembranous spaces look to the naked eye as if they merely contain a transparent fluid—a fallacy which is only dispelled by observing them minutely as the direct rays of the sun are thrown upon them, or by touching them with a blunt instrument.

Thus it will be found that while the membranes of the vitreous body are stretched between the zone of Zinn and the fundus of the eye, the anastomosing cellular tissue radiates from the vertex to the sides of the humor—an arrangement which offers the best provision for the prevention of undue distension of the hyaloid membrane from the accumulation of fluid within. It is also not unworthy of note that the membranes, being the strongest fabric of the two, offer the greatest resistance to distension in the direction in which it would be most injurious to vision—namely, in the direction of the axis of the eye. The crystalline lens and retina are by such an arrangement maintained at a fixed distance from each other; and the delicate retina is also protected from undue pressure, between the hyaloid membrane, on the one hand, and the unyielding tunics of the eyeball, on the other.

Such is the structure of the vitreous humor in the adult human subject. It is so fragile, and the proportion which it bears to the vitreous fluid is so small, that it is scarcely to be wondered at that it has escaped notice so long. Its weight makes no appreciable difference in the specific gravity of the fluid of the humor, which is 1053; for if the fluid of the humor be allowed to drain away, the residue, inclusive of the zonula Zinnii, hyaloid membrane, and posterior capsule of the crystalline lens, does not amount to one grain.

The fluid of the vitreous humor.—The fluid which occupies the meshes of the vitreous tissue gives to the humor its solidity, as well as its pellucid and highly transparent quality. It has a consistence intermediate between water and the serum of the blood. Of the organic constituents of the blood, the only one which it contains, and that even in very small amount, is albumen. According to Berzelius, the healthy vitreous humor has the following chemical composition:—

Chloride of sodium, with a small quantity of extractive matter soluble in alcohol	1·42
Matter soluble in water	0·02
Albumen	0·16
Water	98·40
	100·00

Millon and Wohler have discovered traces of urea in the fluid of the vitreous humor.[*]

The fluid of the vitreous humor is chiefly secreted by the ciliary processes; but pathological observation renders it probable that the vessels of the retina take some share in the same process.[†] Intervening between the substance of the humor and the ciliary processes is the zone of Zinn—a part of the containing envelope of the vitreous humor,—which is a structureless membrane, giving off internally the peculiar structure of the vitreous humor, and externally strong fibres, which bind it firmly down to the ciliary processes.[‡] The two structures are dovetailed into each other—a highly favorable relationship for the secretion of the vitreous fluid. Through the structureless membrane of the zone of Zinn the vitreous fluid filters in its way to the humor; but, like all other cases in which secretion takes place through membranes without the intervention of cells, the vitreous fluid consists merely of the permeable constituents of the blood. The zone of Zinn seems likely to exercise some influence over the transparency and decoloration of the vitreous fluid during life, for after death the power to resist the colored constituents of the blood is lost, in consequence of which the vitreous body soon becomes colored greenish-yellow. A moderate amount of heat also relaxes this membrane so as to facilitate the transudation of fluids through its walls, and consequently inflammatory action of the neighboring structures will probably have the same effect. It is impossible to say whether, under ordinary circumstances, the secretion of the vitreous fluid is rapid or slow, but a large quantity is known to be thrown out when occasion requires, as when some of it has become evacuated by accident. In such cases, however, the structure of the humor will seldom be reproduced in the fully developed eye.

The fluid escapes so readily from the humor that it has become a problem how nature affects its retention. As will have been observed from the description which has been given of the structure of the humor, it is such as to afford ample facility for a free and rapid circulation of the fluid through its substance; and therefore any force inherent in the tissue itself, such as capillary attraction, can have very little effect in holding the fluid in its meshes. Its retention is readily accounted for by the limited permeability of its enveloping structure—the hyaloid membrane—during life. Even after death, when that membrane has lost much of its resistance to permeation, if the vitreous body be exposed entire, the fluid will take some days to drain away, while a few hours is sufficient if the hyaloid membrane has been lacerated. From the natural firmness of the vitreous body, the retention of the fluid has been accounted for by those who deny that the humor is possessed of any structure, by the fluid in its normal condition having a certain consistence resembling jelly, in which case its exhaustion could only arise from the substance of the humor passing from the semisolid to the fluid condition. This is disproved by the fact that the fluid of the humor can be replaced by any other fluid, such as pure water, spirit, or glycerine, merely by imbibition, and the vitreous body still retain the same physical properties.

The physical properties of the humor.—Of the physical properties possessed by the vitreous humor, the most important (if we except its transparency) is its *elasticity*. This force is present in the humor in a high degree; for if the crystalline lens be dislodged, and the posterior capsule cut away under water, the tissue behind swells up and protrudes through the breach—a fact which gains importance from the relation which those parts have to the operation of extractions of cataract. The elasticity of the vitreous tissue enables it to tighten upon the contained fluid, gives the eyeball a healthy tension, and offers such a firm bed for the crystalline lens as to prevent the slightest vibration of that body, and consequent aberration of vision during the motions of the eye in the living subject. By the same agency the vitreous body is enabled to become a fulcrum on which the ciliary muscle acts in advancing the ciliary processes towards the crystalline lens in the accommodation of the eye to near objects. It is also not improbable that the same force exercises in some degree a controlling power over the secretion of the vitreous fluid, in the same way that the endosmotic current, in the ordinary process of absorption, diminishes in the ratio of the distension or resistance of the vessels. If this be the case, the injurious consequences to vision resulting from the loss of the elasticity of the vitreous tissue can scarcely be over-estimated.

The nutrition of the humor.—As the vitreous body does not possess any function of a vital nature, and as it has a temperature amongst the lowest of any organ in the body, it is evident that it must undergo little decay, and exercise little demand over the nutritive forces for its renovation. Nevertheless, though it be a non-vascular body, and though the greater part of it be remote from the sources of the circulation, as it is known to undergo various rapid changes in disease, it must possess a proper system of nutrition within itself. In the absence of all other evidence of a nutritive system within the humor, the cellular elements described under the microscopic anatomy of the humor probably contain nutritive materials; and the anastomosis which exists between cell and cell—to adopt the language of Virchow,* on an analogous nutritive system in Wharton's jelly of the umbilical cord,—"renders possible a uniform distribution of the nutritive juices throughout the whole of its substance." The small amount of albumen which exists in the vitreous fluid is incapable in its crude state of being applied to the nutrition of the fabric of the humor, and therefore the ciliary processes, as the organs of secretion of the vitreous humor, have probably less reference to the nutrition of its structures than the supply of an abundant and highly transparent fluid for mechanical and physical purposes.

---

[*] Carpenter's Human Physiology. 4th ed., p. 54.

[†] Bowman: Lectures on the Parts concerned in the Operations on the Eye, p. 125.

[‡] The structure of the zone of Zinn, as here stated, will be demonstrated in a course of lectures on the Eye which it is my intention to deliver in Glasgow during the ensuing winter.

(To be continued.)

ON

SOME NEW METHODS OF TREATING DISEASES OF THE CAVITIES OF THE NOSE.

By J. L. W. Thudichum, M.D.

V.—*New operation for Nasal Polypi.*

(Concluded from November number, 1868.—p. 670.)

As the *single polypi* are removed, others come into sight which had been displaced upwards or backwards. It is also perceived that sometimes only a portion of a *cauliflower shaped polypus* has been removed, and that the removal of two or three other portions is required before the true pedicle can be drawn into the loop and removed radically. In this way, from half a dozen to three dozen polypi have to be removed in some cases before the nasal cavities can be pronounced clear. Various little artifices are requisite to expedite the operation. Thus polypi which shift at the mere approach of the loop have to be seized by little hooks, made either of steel or of flexible silver, and to be held fast while the loop is passed over them, or to be drawn into the loop. *Oscillating polypi*, or those which can be seen only during expiratory efforts, can only be extracted in this manner. Thus in one case I seized with the hook and removed with the loop a polypus which was attached to the posterior edge of the septum, and by expiration only could be seen vibrating before the posterior middle canal of the left nostril. It was seized during vibration with a little sliding forceps made of steel wire and introduced into the loop. Such is the delicacy of the operation that, although the loop-carrier and the forceps were in the nostril and passed for a length of three inches into the cavity, yet a little of the polypus was still visible to guide the rest of the operation. In anothing case I seized with the hook a polypus which was completely hidden under the posterior concave side of the right lower turbinated bone. After removal it was found to weigh a quarter of an ounce.

A frequent accident during the operation is *sneezing*, immediately after the seizure of a polypus. In such a case the patient must allow the spasm to expend itself without moving. The operator holds a cloth or his hand before the nose and mouth of the patient.

Bleeding sometimes, but rarely, occurs, when the wire-loop touches the posterior vascular ends of the turbinated bone; in some cases, however, any part of the Schneiderian membrane will bleed on contact with instruments. I have always succeeded in arresting it within a few minutes by passing a current of salt water through the patient's nose by means of the nasal douche.

Exostoses sometimes complicate polypi, and the operator is liable to get them into the loop. This accident has occurred to me twice. In such a case I let the assistant steady the patient's head, and heat the loop to whiteness. At the same time I seize the loop-carrier close to the nostril, and, with the thumb steadied against the maxillary bone at the side of the nose, I give a short pull. The exostosis is then detached clean and without the slightest local injury. In case, however (which has not yet occurred to me), the exostosis should be stronger and not yield, then the white-hot wire would probably break. Failing this, the loop could be easily detached by unstringing the pulley, withdrawing the carrier, and ultimately the wire. Calmness of the operator easily reassures the patient. The exostoses can be distinguished by their color, which is more like that of the natural mucous membrane—i.e., of a vivid red, and not like the pale-bluish-red of fibrous, or glistening white of mucous polypi.

Hard fibrous polypi with broad bases are the the most difficult objects to deal with; but with them also the operation, if properly conducted, answers perfectly. As they would not admit of constriction by the loop, a hook has to be inserted at the base, and into the shoulder thus formed the wire must be made to cut while white hot. Hardly any mechanical force is then required, and the polypus comes off as if cut with a knife. A large polypus of this kind I removed in three slices; there was no bleeding, and the operation was so successful that the turbinated bone after a few weeks had assumed its normal shape and appearance.

In cases where the nostrils are excoriated fissured, swollen, or covered with scabs (conditions which occur singly or united), it is requisite to let the patient undergo preliminary treatment for the removal of these exigencies. Of this treatment I shall reserve discussion for a future opportunity, when I hope to treat of the constitutional relations of diseases of the nose.

The following cases will illustrate my general remarks and special points of practice:—

Case 1.—Mr. ——, a medical gentleman, had for many years suffered from obstruction in both sides of the nose, which, by some eminent surgeons whom he consulted, had been declared to be caused by relaxation of the mucous membrane. On examination with the aid of the medical lantern, I found polypi, and removed them subsequently by means of the electrocaustic operation. During the first two sittings eight polypi were removed. As the patient was exceedingly irritable in mind and body, the operation proceeded but slowly, and had to be interrupted repeatedly. During the third sitting polypi Nos. 9 to 13 were removed; during the fourth, Nos. 14 to 17. One, situated far back upon the right turbinated bone, caused a little bleeding. In this case the displacement by crowding of polypi was most curious. The nasal canal, apparently cleared of growths, was, a week later, found to be again filled with polypi which had descended; but were now loose and much more easily seized than the earlier ones. Some had very long pedicles, and all, except one, were attached to the upper and lower turbinated bones. The exception was the vibrating polypus already alluded to, which was attached to the posterior edge of the septum. All the polypi were, though with much difficulty, successfully removed, and the patient breathed freely through both nostrils; and while before he had been obliged to sleep in a sitting posture, and with his mouth open, he could now recline and sleep with his mouth closed. Although no polypi of any kind were visible, and the soft palate could be easily seen through the lower nasal canal during swallowing, the patient had a sensation in his nose as if something remained there—a result, probably, of a new tension which the bones of the nose assumed after the internal pressure was removed.

---

* Cellular Pathology, p. 100

CASE 2.—M.B——, a healthy, strong, stout man, aged thirty-nine, had a discharge from his nose, without odor, ever since his boyhood. Gradually the nose became obstructed, and now both nostrils are impassable on either inspiration or expiration, however forcible. On Nov. 29th, 1866, I removed nine polypi, amongst them a very large one, which was drawn from underneath the turbinated bone with a sharp hook. On Dec. 5th I again removed by the electro-cautery five polypi, also an exostosis or spicula from the left upper turbinated bone; another similar one on the left lower turbinated bone, which simulated a polypus, was not removed. On Dec. 12th I removed six polypi, amongst them one of enormous size, being nearly a quarter of an ounce in weight. Its removal, which was effected by means of expressly devised polypus hooks, cleared the passage for air in and outwards. On Dec. 19th I removed several small polypi and some stumps. After this nothing anomalous remained visible in the nose, the respiration was quite free, and the patient was discharged perfectly cured. In this case the nostrils were very small and the nasal canals narrow. The septum projected towards the left side. The sense of smell was lost, which is not astonishing, seeing that twenty-seven polypi had for years compressed nearly every part of the mucous membrane. The patient was greatly satisfied with the result of the operations.

The polypi in Cases 1 and 2 were of the so-called mucous class; those in the following case, however, were of the hard fibrous variety.

CASE 3.—M.S——, aged fifty five, had at the age of twenty contracted primary syphilis, and the complaint had gradually assumed the constitutional form. This had been termed and treated as gout, to which a few symptoms offered resemblance. After much neuralgic pain in head and limbs, he became subject to frequent colds in the head, until latterly polypi were discovered. On examination, I found on the right side a large long broad-based polypus, or excrescence, on the fore part of the lower turbinated, and a cluster of several polypi on the upper turbinated bone. The septum was so much bulged out to the left that it nearly touched the isthmus at the end of the vestibule of the ala. Here there were two crusted ulcerations. In the left nostril was a small polypus imperfectly divided into two, very inaccessible, not obstructing, and not moved by inspiration or expiration. On Feb. 19th I removed the broad-based polypus by electro-cautery in two slices. If it had been attempted to remove this polypus by forceps, great injury and hæmorrhage would have ensued. The upper cluster of seven separate polypi was removed in ten pieces. Slight hæmorrhage was instantly arrested by the douche. On March 2nd the patient had recovered his sense of smell, which had been completely lost for some time. The septum had returned more to its natural position, and all parts looked well. I prescribed a sulphate-of-zinc lotion and salt-water douche, and on June 27th had the pleasure of again seeing the patient perfectly restored.

CASE 4.—M.T——, aged thirty-five had perceived obstruction in his nose eight years ago, and had since then been operated upon three times, once while under the influence of chloroform. The polypus, however, always returned within six months. The patient's father suffered from polypi for many years without ever having them removed, and a sister has a complaint in her nose which is termed "thickening." The patient's nose is very narrow and most difficult of access. He has a high tenor voice, and is much impeded in its exercise by the growths. On May 7th and 8th I removed eleven polypi, of which four were large and four small; a perfect passage was established, and the patient suffered so little that he was able to sing in a concert next day.

CASE 5.—Mr. S——, aged sixty-five, was introduced to me by Mr. Ed. Taylor, of Clapham-park. The patient had suffered much from rheumatic gout, and had had the polypi more than ten year. A partial operation had once been performed, and much tannin had been used as a snuff, as recommended by Mr. Bryant. Nevertheless the nose on both sides was completely blocked. On Sept. 28th I removed twelve large polypi by electro-cautery, in the presence and with the kind assistance of Mr. Taylor. On Oct. 5th, twenty-four further polypi, of which four were of enormous size, were removed. The right nose was thus completely cleared, and the patient was able to respire freely through it. In this case the polypi all pulsated synchronously with the heart, and I apprehended much hæmorrhage. The right nostril did repeatedly bleed from the mere contact of instruments; but the left nostril, which was narrow, from the septum having been pushed towards the left by the enormous accumulation of polypi in the right cavity, did not bleed at all, the much more severe influence of the contact of instruments notwithstanding. Sixteen polypi were removed from its cavity. The patient expressed himself as greatly satisfied with the result of the operation.

CASE 6.—M.B——, aged fifty-one, was introduced to me by Mr Fred. Webster, Wolverton Station, Bucks. The patient has suffered about twelve years. Three operations, peformed relatively eight, six, and five years ago, never once produced complete relief, and were all followed by more or less complete relapse. A scrofulous tendency is alleged as a cause, which I believe to be correct, there being no other history or symptom of previous disease. Both nostrils are completely blocked, and no air passes even by the greatest efforts. On Oct. 2nd twenty-seven polypi were removed by the electro-cautery, a large one weighing a quarter of an ounce. On Oct. 7th I removed again eight small polypi, and perfectly cleared both nostrils and cavities. The patient had had a perfect passage for respiration after the first sitting, and was highly pleased about his new liberty. This case offers the following peculiarities. In the right cavity, a polypus formed a perfect bridge from the upper turbinated bone to the septum. It was separated from its insertion in the septum by the red-hot wire being pressed inwards into the cavity and withdrawn on the side of the turbinated bone outwards. The polypus, which had created an unexpected difficulty, was thus removed clear from its insertions. The septum was somewhat bulged to the left. After the operation the back of the pharynx could be seen through both nostrils, and the rising of the soft palate in the act of swallowing accurately observed—sufficient evidence of a perfect clearance of both the olfactory and respiratory canal. The patient could smell eau-de-Cologne quite well.

The foregoing cases are selected for the purpose of showing the efficiency of the new operation under the most difficult circumstances, in various subjects, in cases of long standing, and after repeated failure of the old method of pulling out the polypi by forceps. In Case 6, twenty-seven polypi and four stumps were removed by thirty-three introductions of the loop. Consequently only two loops came away empty: one because it broke, the other because it was arrested by the bridge-like polypus described. The operation, therefore, strictly fulfilled the ideal demand of its theory. On the whole the results of the operation have surpassed my anticipations: and I can therefore, have no hesitation in recommending it strongly to the attention of the medical profession.

Pembroke road, Kensington, Oct. 1868.

◆

OBSERVATIONS ON OPHTHALMIC SURGERY.

By Haynes Walton, Esq.,

Surgeon to St. Mary's Hospital, and to the Central London Ophthalmic Hospital.

SYMPATHETIC OPHTHALMIA.

(Continued from December number, 1868, p. 723.)

Treatment.—No general or local treatment, no local application, no dietary system, is of any avail in checking unequivocal sympathetic ophthalmia. Nothing of the kind can be depended on. The affection can be stopped or subdued only by practical surgical treatment applied to the eye originally hurt. It was in consequence of reading of the principles of such practice by Mr. Barton, of Manchester, published by Mr. Crompton in the *Medical Times*, that I adopted the plan and made the results known. I believe that Mr. Taylor and myself were for years the only surgeons who resorted to it.

Mr. Crompton's report states that the sympathetic disease was produced by injury from extraneous bodies in the eye. In seven cases a portion of copper had settled in the anterior chamber. Inflammation and disorganisation of the eyeball were soon followed by failure of the functions of the other eye, together with structural changes. Mr. Barton excised the cornea and applied a poultice, in the hope that the copper-cap would escape: this did happen, and produced great relief; but it had a more valuable effect, for it saved the sight of the other eye in every instance, although some of them seemed past all hope.

Mentioning these facts induces me to state that at an early period of my connexion with opthalmic medicine my attention was arrested by sympathetic ophthalmia, and I lost no opportunity of examining the subject. I was joined in the work by Mr. Taylor. We both published many of our observations, with cases, in the medical journals during the years of 1852, '53, and '54. It is satisfactory to find that our facts and deductions remain as such still, and that nothing then advanced has been rendered obsolete by other observers.

This surgical treatment, then, of the exciting eye should vary in application and in detail according to the nature of the disease. Any body, extraneous or otherwise, within the eye that irritates should, it possible, be extracted. When, as in the case of a wound or any other occasion, the centre of irritation is limited to the front of the eye, the rest being healthy, the front only should be removed by amputation: abscission is the term often used for this operation. When there is complete internal disorganisation of the eyeball, or general enlargement or atrophy, extirpation is necessary.

Each operation properly selected, will confer advantages equally lasting. In no instance have I been disappointed. The sympathising eye must not be left to take its chance. Even when no objective symptom is present, it will recover all the sooner for rest for some weeks or months, and for protection, if requisite, from daylight; there should always be long rest from use by artificial light.

When inflammatory changes are present, I treat generally and locally, just as if I had before me an instance of rheumatic or other inflammation from a constitutional cause. I consider that there is acute ophthalmitis.

Prognosis.—The effect which is obtained by operating on the originally affected eye, together with general and local treatment for the other, is favorable beyond expectation—speaking from my own experienee, almost invariably so. In every case in which there has not been structural change, complete recovery has ensued, and many times it has been as rapid as perfect. Where there have been degenerative changes going on, they have been arrested; and so thoroughly and completely has this been accomplished, that on some occasions, even when the disorganisation has proceeded far enough to spoil the eye for practical purposes, I have restored useful sight by establishing a pupil.

Amputation confers advantages equally lasting with extirpation. I cannot question its permanent effects, since I have never been applied to by any patient on whom I had performed it, in consequence of its insufficiency, and I have seen some of them after periods of five, ten, and fifteen years. Mr. Taylor, who has operated as frequently as myself, tells me that his experience entirely coincides with mine.

The advantage of the presence of a reduced eyeball, and the disadvantage of an empty orbit, are manifest. As a rule, amputation should always be selected when it is admissible. Where the sympathising eye has been so damaged as to require an operation to restore sight, such should be delayed till the inflammation has been thoroughly subdued. The condition of the eye will most likely call for the formation of an artificial pupil, together perhaps sometimes with the removal of the lens.

Respecting the question of the primary cause of sympathetic inflammation, notwithstanding what is known about the impressions on the two retinæ coinciding, about the accomodating effort in each being equal and simultaneous, about most of the ocular muscles in the two acting in unison, about irritation that produces lachrymation in one eye causing it also in the other, as well as the reflex phenomenon of the contraction of the pupil of the one, when exposed to light, being followed by that of the other, all of which show a marvellous healthy sympathy, the morbid sympathetic action cannot be explained. Mackenzie's theory is that most generally accepted. He pointed out many years ago that those organs of the body are most apt to affect others, or, in their turn, to be affected sympathetically, in which the nervous system is most developed, and that there are no organs between which a sympathy in different states of disease exists so remarkably as the eyes. He showed that there are no organs in which the nervous system is more developed, none in which the nerves of the opposite sides are connected in the same intimate way, and suggested as probable that the bloodvessels on the side of the injured eye, being in a state of congestion which attends inflammation, communicate to those of the opposite side, with which they have connexions within the cranium, a disposition to the same state in which they themselves are. He thinks that the ciliary nerves of the injured eye may be the means of conveying to the third and fifth nerves an irritation which may be reflected from the brain to the same nerves in the opposite side, but that the chief medium through which the sympathy is excited is the union of the optic nerves. Some men think that the optic nerve has no concern in the act. Bowman supposes that the vaso-motor nerves that reach the eye with the vessels themselves, have much to do with the influence.

The question has been much discussed during the present year, and evidence sought in morbid changes in the nerves themselves, but nothing satisfactory has been made out. The atrophy and other changes are alike to be found in disorganised eyes that have not caused any sympathetic disease. It is not clear to me, from all that I can gather in practice, that the source of irritation can be said to arise in any particular form of degeneration or disorganisation, nor be traced to wounding of the ciliary region, irritation of the ciliary body, or to cyclitis, or inflammation of the ciliary region of the choroid. From the great variety in the nature of wounds, whether incised or punctured, as well as in the situation of them; from the fact that any of these, as well as blows without breach of surface, burns with strong acid and fire, surface irritation from the wearing of appliances, and idiopathic disease, may produce the sympathy, I can come to no other conclusion. In the remarkable case of gunshot accident that was treated by Dr. Butler, of Plymouth, and recorded by Dr. Mackenzie, sympathetic disease was set up. After the wounded eyeball was extirpated, the duck-shot was found firmly impacted "in that part of the optic nerve which joins the retina."

In traumatic cases the injury should be regarded merely as an exciting cause of subsequent morbid changes to which the sympathy is due. Experiments which have been made on the lower animals by Donders and others have, up to the present time, given but negative results.

The ciliary nerve influence has been so strong in the minds of some men that the division of these nerves has been conceived and executed. Such practice by Dr. Edward Nieyer has been recorded in his paper on Sympathetic Ophthalmia in "Les Annales d'Oculistiques." He recommends it, instead of extirpation of the eyeball, for sympathetic neurosis, by which is meant chiefly the subjective symptoms of the disease.

I shall illustrate this paper with a single case. It is as marked an example of the effects of sympathetic disease, and of its arrest by treatment, as I ever met with; moreover, it confirms much that I have said.

A farmer was accidentally shot in his right eye twenty-seven years ago. The eyeball was penetrated; some of the vitreous humor escaped directly, and with it two shots. Vision was destroyed. The inflammation which followed subsided in a few weeks. For twenty years he suffered no inconvenience in his eyes, but now the left eye occasionally became inflamed from exposure to cold winds, or from any irregularity in diet, such as drinking too much. The attacks became more frequent without any apparent exciting cause, and in 1866 this gentleman was brought to me by Dr. Edward Lawford, of Leighton-Buzzard. I found the eye damaged from the repeated attacks of inflammation: the iris was discolored and bulging, and the pupil nearly generally adherent. The vitreous humor was a little hazy; vision was imperfect. As I could not detect any irritation in the wounded eye, which was very much shrunken, I thought I had before me a case of rheumatic ophthalmia, and prescribed accordingly I saw my patient several times afterwards, during successive attacks of inflammation. The eye got a little worse, in spite of all treatment and all care, and sight was fast failing. On his last visit to me I examined the collapsed eye very carefully again, and pressed it firmly between the fingers. This caused much pain. A repetition of the pressure produced the same effect, and the patient said, "No pressure hurts the other eye, but this is most intolerant of any." I was now quite satisfied that there was irritation here, which was affecting the other eye, and I recommended the removal of the stump This was at once acceded to, and I operated. A grain of shot was discovered in a mass of fibrinous effusion. Besides this there was a cup of bone deposited between the sclerotica and that which remained of the choroid. The left eye commenced to improve from the very hour of the operation. The pain disappeared, the muscæ decreased, and vision improved. At this time, two months from the operation, vision is still better, and small type can be read. The vitreous humor is almost clear. I have no doubt that the vision will improve still farther.

Brook-street, W., Sept. 1868.

ON THE POSSIBILITY OF STAMPING-OUT SMALL-POX.*

ILLUSTRATED BY THREE MODES OF PROCEDURE.

By Robert Pringle, M.D.,

Surgeon to H.M.'s Bengal Army, and Superintendent of Vaccination, N. W. Provinces of India.

Before entering on the subject of this short paper, I would briefly allude to the circumstances under which the idea of it originated. Soon after my return from India, while calling on my former professor, and the President last year of the Health Section of the National Association for the Promotion of Social Science, Sir James Y. Simpson, Bart., my attention was drawn to his pamphlet, entitled, "Proposal to Stamp-out Small-pox and other Contagious Diseases," and published in 1868. On carefully perusing it I was much struck with the absolute practicability of many of the measures therein recommended, and of the rules laid down, as witnessed in the instances which I shall presently describe, and which had occurred in my practice in India in 1863, and the subsequent years. As stated in the title of this paper, I have, for facility of illustration, and to exemplify the methods I would suggest more clearly, divided the subject into three heads, or more properly speaking, modes of procedure—viz.,

1st. By isolation, with destruction if practicable, and purification invariably, of all materials or subjects likely to convey contagion or impart infection.

2nd. By careful and systematic vaccination at the period of the outbreak of small-pox.

3rd. By similar vaccination at any period prior to the out-break.

1st. *By isolation, with destruction when practicable, and purification invariably, of all materials and subjects likely to convey contagion or impart infection.*—The instance illustrative of this method of procedure occurred under the following circumstances:—

While stationed at Morar in Gwalior Central India, with the troop of Royal Horse Artillery of which I was in medical charge, in the beginning of the year 1863, some cases of small-pox appeared among the camp-followers of an officer, who had lately joined, and had just concluded his march from Saugor. On the cases being brought to my notice, I at once went to the principal medical officer of the division, and, after describing to him the method which I proposed to adopt, in the event of his approval, to prevent the disease spreading amongst the large European and native force stationed at Morar, and obtaining his sanction, I received, by order of the General commanding, a tent which had been previously condemned as unserviceable, and which I had pitched half a mile to the leeward of the last building in cantonments. Into this tent I removed all the cases of small-pox, seven in number. The only occupants of this tent, besides the patients, were the mother of one of the children and a native to wait on and cook food for the sick. This native was specially selected for this purpose owing to his having had, judging from the marks which remained, a very severe attack of small-pox some years before. I would not allow any of the inmates to leave the tent, and prohibited all communication with it; myself and the native doctor alone visiting the tent, treating the cases, and seeing that they had all their wants supplied. While discussing my project with the principal medical officer I told him I would take all the responsibility and risk on myself, and would adopt all practicable measures to prevent myself being the means of conveying contagion or imparting infection to the patients in my hospital or to the community at large.

After this tent had been pitched, and the first cases isolated, two more occurred, one three and the other four weeks after the first appearance of the disease. These were at once sent to the small pox tent and treated with the rest. These two cases occurred in the very centre of the cantonments; and I would beg to draw particular attention to the following. On the first appearance of the disease in the papular, and hence non-infectious, stage in these cases, they were at once isolated. What the consequences might have been had the vesicular stage been reached or nearly completed, I am not prepared to say, but will allude to again hereafter, when comparing this outbreak with one that occurred in the next year—namely, 1864.

I had the satisfaction of seeing every case admitted into this tent discharged recovered. Before they left, however, their clothes were taken from them and burnt; and after they had bathed they were supplied with new clothes. The tent was kept pitched for some time, to see if any more cases appeared, and none occurring, it also was burnt as it stood. Fortunately for me, I had selected an unserviceable tent, which, though condemned as such for Europeans, answered the purpose very well for which I wanted it, as months afterwards a charge was made against me for a tent burnt by my orders; though I must add that, on mentioning that it was considered unserviceable, and the *service* it had rendered, I was exemplified from the cost of it. Thus the last sources of the disease were removed, and the epidemic ceased. Here I think it will be allowed the disease was *stamped out.*

Let me, however, allude briefly to what was witnessed next year. During my absence on leave, small-pox appeared in the Morar cantonment in a similar manner to that just described; and on my return from leave there were cases of small-pox scattered over the station, and not one regiment could be said to have escaped. The Regimental Records of 1864 thus show a very different result as compared with those of 1863, in which year not a single case occurred in any European regiment; and of those isolated eight were among the camp followers and one a trooper of a native cavalry regiment. Let me remark here, from personal experience and observation, that it is impossible in the plains of India to vaccinate successfully (owing to the heat of the weather and the deterioration of the vaccine vesicle) a European or native subject, for nearly seven out of the twelve months of the year; and as it is during these seven months that small-pox prevails as an epidemic, I leave it to those best capable of judging them as to the benefits conferred on the unavoidably unvaccinated European and native children, by confining the contagion of small-pox within the smallest possible limits, as was seen in 1863, or spreading it broadcast, as in 1864. The cause of the difference in the Regimental Records before alluded to was to be found in the absence of all measures of isolation, properly so called, in 1864, and in ordering out of cantonments all cases of small-pox which occurred in the regimental bazaars, in the persons of non-combatants, not being camp-followers. These Regimental Records, of 1864 may and will show the results of this outbreak of small-pox in the regiments themselves; but who shall attempt to record the injury done to the surrounding population by the cases of small-pox ejected out of the cantonments and thrown broadcast in the district, at the hottest season of the year, when the disease assumes its most fatal type.

---

* A paper read before the Health Section of the National Association for the Promotion of Social Science, at its Congress in Birmingham in 1868.

2nd. *By careful and systematic vaccination at the period of the outbreak of small-pox.*—The two instances illustrative of this method occurred in 1866, at a season of the year, and at an altitude above the sea, at which vaccination in India can alone be successfully carried out during the hot season. The circumstances of the first were the following:—While engaged in superintending vaccination in the Himalayas I received a report that small-pox had appeared in a village at some distance, and the informant told me that unless I sent assistance promptly in the shape of vaccination, the native inoculators would commence operations. I at once despatched a vaccinator, and directed him to isolate the case; but as some time had been allowed to elapse before I was informed of it, it would perhaps be inexpedient to remove the other occupants of the house. My orders were most carefully executed; and on my visiting the village I found that all the cases requiring vaccination—upwards of 120—had been successfully operated on, and the disease died out for want of cases amenable to its influence. My conjecture, however, regarding the inmates of the house in which the case lay proved to be correct as I found two others of the family suffering from small-pox, contracted before my vaccinator had arrived. Here also I think it will be allowed that the disease was *stamped out.*

The other instance, as said before occurred in the same year, but under slightly different circumstances. On hearing that small-pox had appeared in the district of the Himalayas where vaccination could be carried out successfully at that season of the year, and that the native inoculators had commenced operations, I despatched vaccinators, and directed them to vaccinate all the cases requiring it in the immediate neighborhood; with the double object of placing vaccination and inoculation on their trial for the benefit of the natives (among whom I was anxious to introduce the former, to the supercession of the latter), and of preventing the disease spreading. I visited the district myself, and found that my vaccinators had been most successful, not a single case of small-pox occurring where they had been at work; while from small-pox from inoculation alone six deaths had been witnessed out of sixty operated on by the inoculators. I am happy to be able to add that the natives of the district decided in favor of vaccination, in preference to the time-honored and priestly practice of inoculation. Here was a community protected from an amount of contagion and infection—as each inoculated case could impart both similarly to one of ordinary small-pox—which it is difficult to overestimate, and the disease more than stamped out—namely, *debarred an entrance* among them.

3rd. *By similar—i. e., careful and systematic—vaccination at any period prior to the outbreak of small pox.* The particular instance which I will select to illustrate this method is comprised in the results of personal observation and experience during the years 1865, 1866, and 1867, and was witnessed in the Hill Sanitarium of Mussoorie, in the Himalayas. In each of the three years under notice, small-pox had, in a few cases, with the disease contracted in the plains, made its entrance into Mussoorie. In two out of the three years it was limited to the cases themselves, and in the third it did certainly extend, through carelessness and apathy on the part of the natives, to a few men, but then died out. From personal observation, as I superintended the measures of isolation employed, I feel that this *stamping out* was not due, except to a very limited extent, to isolation, but (excluding the native portion of the population whose immunity was traceable to inoculation in infancy) to the vaccination had recourse to in infancy amongst the European residents; and though I must add that my experience of vaccination in India, in those who have been vaccinated in infancy in Europe, is far short of what I would term careful and systematic vaccination yet it is consoling, and I may add encouraging, to know that, imperfect as this vaccination is, and by late authors on the subject allowed to be, it is nevertheless, when attended with not very stringent rules of isolation, capable in itself, under certain circumstances, of giving the death-warrant to an outbreak of small-pox. To elucidate the subject to those unacquainted with it as seen in India, I may, perhaps, mention that the population of hill sanitaria in the Himalayas generally, differ as regards their susceptibility to the infection from small-pox from that of the plains for the following reasons, and which are in support of the theory of the possibility of *stamping-out* small-pox:—The native population of these sanitaria is almost entirely composed of the hill tribes, who have been inoculated in infancy, and the few plains-men among them are adults, who have either suffered from small-pox during their stay in the plains, or seem to be proof against it in the most concentrated form of its contagion as met with in the towns and villages of the plains; while the European portion of the population has, as a rule, been protected by vaccination in infancy, or again protected by revaccination, if successful vaccination, after imperfect (and hence, in my opinion, useless) vaccination in infancy can be termed revaccination in adult age. In the plains of India, however, the susceptibility of the native portion of the population, from the absence of any prophylactic measures whatever, reaches a height which must be witnessed to be believed; and if I can state, from personal observation, that nearly 95 per cent. of the native population of the plains of India will if the search is sufficiently carefully conducted, show traces of the disease I will leave it to be inferred what the mortality must be from such a prevalence. Nothing but the *most extensive vaccination* and most stringent isolation can ever make head against small-pox in the plains of India; and, with its vast population, and the present scheme of voluntary vaccination in its infancy, I fear the day is far distant when a disease which counts its victims by thousands annually can be curbed and finally *stamped out.* It is in these plains, and amongst the population that I have described, that the most numerous cases of small-pox are met with amongst the popularly considered vaccinated Europeans. The force of this wide-spread and ever recurring contagion is irresistible; and vaccination has many a taunt unjustly showered on it by this contagion searching out the cases carelessly, and hence unprofitably, vaccinated in infancy. The picture of the Himalayas, however, is a brighter one, as compared with the plains of India; and with the experience acquired in the instances I have described, with the efficient staff of native vaccinators which I now possess, with inoculation prohibited, and the sympathies of the natives enlisted voluntarily on the side of vaccination; coupled with all this, a population more manageable, so to speak, as regards numbers and the means of communication, and hence the facility of spreading contagion more limited, with all this, I trust my district of the Himalayas —viz., that lying between the Ganges and Jumnah, from their sources to where they enter the plains, and to which I return in January—will, before many years are passed, be freed from small-pox by the disease being debarred an entrance, and the natives able to look back on its ravages—an instance of which I will describe—as the visions of a horrid dream. With this instance I will conclude. While visiting a village in my Himalayan district, with the villagers assembled to watch the operation of vaccination or "Belattie chapah"—foreign marking, as they term it—I noticed a complete gap in the population—viz., an almost entire absence of children between the ages of eight and twelve, though there appeared no want of younger and older subjects for vaccination. On asking the reason, I was told that the few children before me between these ages were all that had escaped from an outbreak of small-pox which occurred some years previous.

If proofs were wanting that it is possible to *stamp out* small-pox, I trust the instances which I have described will supply them; and I would merely add, in conclusion, that though these proofs may have been attained in certain portions only of the vast continent of India, and that by a system of voluntary vaccination, yet, if such is the case, Great Britain, with its Vaccination Act, its more limited population and extent of country, the means at the disposal of the authorities for carrying on vaccination, and lastly, the vast advantages it possesses in civilisation and education, is without excuse for the prominence which small-pox acquires in the returns of the Registrar-General.

ON

SCARIFICATION OF THE CERVIX UTERI IN INFLAMMATORY AFFECTIONS OF THE WOMB.

By R. H. Meade, F.R.C.S.,

Consulting Surgeon to the Bradford Infirmary.

The management of some of the diseases of the uterus often occasions much trouble and considable disappointment to the surgeon engaged in general practice. I shall therefore make no apology for offering a few observations on the mode of treatment which I have found most successful in a class of cases which is perhaps more frequently met with than any other among these affections.

The forms of uterine disease to which I particularly wish to direct attention are those inflammatory states of the organ in which congestion, inflammation, and ulceration of the cervix play so prominent a part. The causes and varieties of these affections are very numerous. We often find the cervix swollen and red; sometimes it is partly denuded of epithelium, and assumes a granular appearance, having a velvety feel to the touch; and sometimes it is decidedly ulcerated. With regard to the causes, anything that produces determination of blood to the uterus, or excites inflammatory irritation of the organ, may bring on inflammation or ulceration of the cervix.

These complaints are, as might be expected, much more common among married than single women, and in many instances follow miscarriage, or labor at the full period of gestation. They often accompany menorrhagia and dysmenorrhœa. In most of these cases, as Dr. West has pointed out, the visible state of disease in the cervix is only an indication of a more deeply seated, but hidden inflammatory condition of the body of the womb; the treatment therefore should be such as will relieve the whole organ.

These complaints are sometimes connected with, and apparently produced by, general constitutional disorder, and require appropriate general treatment. Still many of them are in a great measure local, owing to the physiological peculiarities of the uterine organs. During the periodical determination of blood natural to the menstrual period the uterus is exposed to increased danger from accidental causes, as exposure to cold, violent exertion, &c.; and marriage, pregnancy, abortion, and delivery are still more fruitful causes of local mischief. Our treatment, therefore, must be chiefly directed to the uterus itself.

Where true ulceration exists, great benefit will doubtless accrue from the use of caustics, the nitrate of silver appearing to me to be the one most generally applicable; but when the neck of the womb is enlarged and abnormally vascular, showing that the walls and lining membrane of the body of the organ are similarly affected, what will relieve the patient so speedily or effectually as the local abstraction of blood?—and the point to which I wish to direct attention is as to the best mode of effecting that object.

Local bleeding has been prominently brought forward, as one of our most powerful means of relief in the treatment of these cases, by all our best writers on uterine diseases; but the agents which they have principally recommended are leeches, which may be applied either to the cervix itself, the margin of the anus, or the vulva. Leeches applied to the lips of the uterus are very efficacious, but give a great deal of trouble. In London and other large cities nurses can be obtained who have been taught to put them on: but in the country, if used in this way, they must be applied by the surgeon himself, and the loss of time necessarily entailed by the personal performance of this operation will often cause it to be deferred or neglected altogether. I was formerly in the habit of ordering leeches to the anus, but not feeling satisfied with the relief thus afforded, and finding a dislike to the application of leeches among many patients, I was induced to try the plan which I now beg to recommend—namely, the direct abstraction of blood from the neck of the womb, by making incisions, or rather punctures, into its substance. Quite as much blood can thus be obtained as by means of leeches, and in a much more easy and rapid manner. The whole operation may be completed in two or three minutes, without any fuss or preparation, at the same time as the necessity for its performance is ascertained by an examination with the speculum.

In advocating this method of treatment, I do not bring it forward as any novelty, for I am aware that scarification of the lips of the womb has been recommended by many authors for the relief of congestion and inflammation of the cervix; but I cannot find, in the works which I have consulted, any precise directions as to the method of its performance. It has been compared to scarification of the palpebral conjunctiva, and I presume is therefore expected to be performed in a similar manner—namely, by drawing the edge of a sharp lancet lightly across the inflamed surface. Very little blood could be thus obtained, and I am not surprised at leeches being recommended in preference to scarification, in cases where much depletion is desired.

The plan I adopt is to make a number of punctures or stabs with a straight lancet-pointed bistoury, having a long handle, which stabs I make more or less deeply and more or less numerous, in proportion as I think it necessary to take away much or little blood From one to two or three ounces may be easily thus procured. Of course a speculum must be used, and the one which I prefer is a bivalve one, with wide flat blades. I think it is called Tyler Smith's speculum by the instrument makers. The blades are not very long, and, being wide at their extremities, when fully expanded they stretch and shorten the walls of the vagina, so that the cervix uteri readily falls between them, and is easily seen and reached. Another advantage of this speculum is, that when closed it is very easy of introduction.

In this mode of abstracting blood it is seldom necessary to puncture or cut very deeply; but incisions in the lips or neck of the womb seem to heal very readily. I have never seen the slightest inconvenience follow, however deeply I have made them, with the exception of the bleeding being rather profuse.

In conclusion, I will briefly relate three cases, to show the benefit that may be derived from the treatment I have advocated, in three distinct varieties of inflammatory disease of the uterus.

Case 1.—I was consulted in August, 1867, by a married lady, about thirty years of age, who was laboring under the rather rare affection called cervical leucorrhœa, in which considerable quantities of thick albuminous matter collect in the canal of the cervix, and escape in gushes. My patient complained of periodical attacks of pain, accompanied by a feeling of throbbing and distention, as if an abscess was forming, which attacks recurred every few days, and were relieved by the escape of a gush of matter. She was a person of nervous temperament, who had suffered for several years from a variety of uterine symptoms; but the peculiar ailment I have described came on about twelve months before I saw her. She had consulted an eminent obstetric physician in London, who recommended the free and frequent application of nitrate of silver, which treatment had been fully carried out during several months, but without relief.

Upon examination with the speculum I found the cervix red and swollen, and the margins and entrance of the os granular or superficially ulcerated. A considerable quantity of discharge was found escaping from the canal. Intending to follow out a suggestion made by M. Huguier, and alluded to by Dr. West in his work upon the Diseases of Women—viz., to scarify the interior of the canal before applying caustic in these cases, I made several free incisions into the margins of the os, and finding them bleed very freely I determined to wait and try the effect of the loss of blood before using the nitrate of silver. I was pleased to find that my patient continued longer than usual without any return of her usual symptoms; so I repeated the local bleeding, making several punctures in the cervix, as well as some incisions in the sides of the canal. In addition to the relief which was thus afforded to the pain, fulness, and throbbing, she said that she felt as if the discharge was enabled to escape more freely, which I explained to be the result of the incisions liberating a kind of inflammatory constriction of the external os. I continued the scarification about once a week for several weeks, and then at longer intervals for a period altogether of four months, abstracting from half an ounce to an ounce of blood at a time. A gradual improvement took place both in the local ailment and the general health, which had suffered considerably from the pain and unavoidable confinement; and when I last saw her she was better altogether than she had been for several years, and the discharge and granular state of the cervix had both disappeared.

Case 2.—A married woman, a little over forty years of age, who had borne no children, was of a plethoric habit, and in easy circumstances, complained in March, 1868, of a feeling of fulness, weight, and bearing down about the womb, accompanied by nervous and dyspeptic symptoms and scanty and irregular menstruation. She said that her mother had died of cancer of the uterus, so she feared she might be threatened with the same complaint. The surgeon who had previously attended her told me that some two years before she had suffered from similar symptoms, which were then accompanied by deep ulceration of the cervix, extending into the canal, requiring repeated applications of caustics for its removal.

Upon examination I found the cervix red and considerably swollen, particularly the posterior lip, which was rather hypertrophied. The os was small and circular, with a little granular patch on its posterior edge. There was no other appearance of ulceration, and little or no leucorrhœal discharge. I abstracted about an ounce of blood by puncturing the cervix. I directed her to keep quiet, and prescribed a little cooling aperient medicine. I continued the treatment for two months, repeating the bleeding every four or five days for the first month, and afterwards at rather longer intervals. At the expiration of the time all the uneasy feelings about the womb had ceased, the redness and swelling of the cervix had much diminished, the slight abrasions had healed, and my patient expressed herself as feeling well.

Case 3.—A young married lady, who had had one child in the spring of 1867, which did not live, consulted me in June, 1868, in consequence of being regularly sick every morning. Her general health was good, and menstruation was perfectly regular, though rather profuse and sometimes painful. She had suffered from this sickness for several months, and at first thought that she must be pregnant, but the regular return of the catemenia negatived this supposition. There being no bilious nor gastric derangement to account for the sickness, I at once told her that I had no doubt it was produced and kept up by an inflamed state of the cervix uteri. She had suffered very much from sickness all through her pregnancy; and I have on several occasions verified the observation of Dr. J. H. Bennet, that unusually prolonged or violent sickness during pregnancy is caused by ulceration and inflammation of the cervix, and will be relieved by its cure. I therefore felt certain that the sickness in the present case was of a somewhat similar nature.

The speculum revealed a highly congested state of the neck of the womb, and I found upon the posterior lip, close to the os, a pustular spot of ulceration, almost like a little boil. I touched this spot with nitrate of silver, and pricked the cervix pretty freely with the lancet. Rather profuse bleeding followed, which continued slightly for two days, during which time she kept mostly in the recumbent position. The sickness was immediately relieved by the bleeding; but I repeated the scarification twice more, at intervals of a week between each operation, abstracting less blood than on the first occasion. At the end of three weeks the congestion and ulceration had almost disappeared, and she felt quite well. She now left home for the continent, and I recommended her to go to Kissingen, and try the effect of the waters there.

Bradford, July, 1868.

◆

ON THE APPLICATION OF THE SPECTRUM-MICROSCOPE TO MEDICAL SCIENCE.*

By H. C. Sorby, F.R.S., &c.

When requested by the Council to deliver the opening lecture at the Sheffield Medical School, I not only hesitated, but actually declined to do so. I must admit that the physico-chemical inquiries in which I have lately been engaged, in one way or other, have many points of contact with nearly all branches of natural science, and certainly could be applied to a number of important questions connected with physiological chemistry. Unfortunately, however, that is the department which I have studied less than any other. I have accumulated a very great number of facts bearing on botany, mineralogy, and general chemistry but have never applied myself definitely to what could be strictly called "the application of the spectrum-microscope to medical science." I have always had such an object in view as one department of my subject, being persuaded that much could be made out by that means; but it appeared to me desirable to establish certain general principles before entering on that inquiry. However, I have been led, as it were by accident to observe some few facts connected with physiological chemistry, which I will incorporate with those observed by others, so as to make my subject to some extent suitable for this occasion.

Spectrum analysis is really nothing more than a very refined and accurate method of distinguishing substances by their color. This is, of course, very commonly employed in every-day life—for example, we at once recognise the difference between gold and silver; and it is also frequently a most important means of distinguishing substance which give colored precipitates on the addition of particular chemical reagents. The chief advantage in employing spectrum analysis is that it enables us to distinguish colors which are almost or quite the same when viewed in the ordinary manner, and at the same time also enables us to detect a substance even when the natural color is completely changed by its being mixed with another colored substance. Thus, for example, we might have several substances of the same pink color, one of which gave a broad absorption band in the green another a single narrow band, and others, two, three, four, or more bands in various positions, which would thus serve to distinguish the different substances. We might also have any of these mixed with a blue or a yellow substance, so that in place of being pink it would be blue or red, quite unlike its own natural pink color, and yet the number and position of the characteristic bands might enable us to detect its presence without material difficulty. However, in judging merely from color, we should not rely on one condition alone. We all know that a metal may look yellow like gold, and yet be only brass; and we soon decide which it is by the weight or some simple test. In the same manner it is quite possible that in certain conditions two distinct substances may give so nearly the same spectra that it would not be desirable to trust to one spectrum alone, but by adding some reagent they may be made so completely different that there could be no more doubt. This leads to such a wide branch of inquiry, that in place of being a subject for a lecture, it will I trust, form the subject of a separate work, which I purpose writing in due course.

In illustration of these facts, I could scarcely choose a better subject than blood, even if it were not desirable to restrict our attention to a particular class of facts. The remarkable spectrum of blood exposed to the air, which must be considered equivalent to that of arterial blood, is rapidly changed by deoxidising reagents, or more slowly by being kept from contact with the air, and becomes equivalent to the spectrum of venous blood. This change in the blood can be easily followed by the change in the spectrum, and clearly shows that various substances contained in the blood have the power of depriving the coloring matter of arterial blood of part of its oxygen, which is again restored to it by exposure to the air. I need not say that this interesting discovery of Stokes throws a great amount of new light on the phenomena of the circulation. Then, again, we may add a little acid to blood, and watch the gradual change in the spectrum; and on adding excess of ammonia we notice that the original spectrum is not restored, thus, proving that weak acids do actually change the coloring matter into a new substance. This, like that in arterial blood can be quickly deoxidised by deoxidising reagents and gives a new and very remarkable spectrum, of the greatest value in detecting blood-stains. If after having been acted on by citric acid excess of ammonia be added, and this solution be sealed up in a glass tube, a slow process of deoxidation takes place, so that in the course of a year or two the spectrum of deoxidised hæmatin is seen to very great perfection.

---

* Being the Introductory Address at the Sheffield Medical School.

It has been notice that when animals had been poisoned by breathing carbonic oxide, the blood remained of very bright scarlet color. This led to the study of the spectrum of a solution of blood through which carbonic acid had been passed. It seems as if carbonic oxide can replace the oxygen in arterial blood, and that it cannot be removed by either oxidising or deoxidising reagents. I have kept such a solution for months in a tube, and it has not undergone any change. The spectrum is nearly the same as that of arterial blood, but yet differs from it very perceptibly, in having the absorption bands a little nearer the blue end. That the circulating fluids in some of the lower animals, which do not contain the same coloring matter as the blood of the vertebrata, contain a substance which can exist in an oxidised and a deoxidised state may also be ascertained from the spectra. This I have proved in the case of some red insects, and Mr. Ray Lankester has also observed other similar cases. Evidently, therefore, the transformation of their tissues is thus brought about in the same sort of way as that of higher organisms—by the transference of oxygen from a peculiar state of combination; and probably this may occur in other cases where the fact cannot be proved by means of the spectrum.

Before leaving the question of blood it will be well to say a few words about its detection. I will not enter much on that department, which has a more important bearing on medical jurisprudence than on medical science generally. There is no difficulty in detecting as small a quantity as the 100th part of a grain in cases where usual methods would entirely fail; and this has been applied with complete success in several important trials. I also find that the spectrum method may be employed to great advantage in detecting very small quantities of blood in urine. For this purpose a long experiment tube should be used, in order to observe the effect of a long column, and by that means as small a quantity as the 10,000th part can be recognised. This is equivalent to about one grain to a pint, and is so little that it produces scarcely any effect on the general color.

The study of bile by means of the spectrum microscope was long since pressed on my attention by Dr. Letheby and I have always thought that it was a promising field of inquiry. Our friend Dr. Frank Smitn has examined the question, and was kind enough to show me some of his preparations. These quite convinced me that a careful investigation would yield many most interesting facts.

Until more attention has been paid to the subject, it would be impossible to say to what other physiological questions the spectrum method of investigation could be employed; but I trust that what I have said will suffice to show that many important facts are within our reach.

In concluding, I cannot forbear saying a few words on what has pressed itself more and more on my mind, the more experience I have had in scientific investigations. It is the absolute necessity of perseverance in spite of every difficulty. As a general rule, I find that things which are easy and straight-forward yield results of inferior value; but when I come across questions which are so extremely perplexing that the inducement to abandon them altogether is very strong, then I find that it only requires more perseverance to discover facts of far greater importance. We may almost say that because a question appears perplexing, it follows that something valuable remains to be learned. Truth is always simple, and facts seem anomalous and strange merely because we are ignorant. I could easily give you many illustrations of these conclusions selected from my own investigations, if it were desirable. I have also found in many cases that just when I was about to despair and abandon a subject, something has turned up to clear away every difficulty. I need scarcely say that I mention these circumstances with the view of inducing you to adopt similar views. If in your studies you meet with difficulties, do not attempt to avoid them, but face them. If you cannot master them at the time, do not abandon the endeavor, but hold yourselves ever ready to renew the attack, if anything should occur to help you to supply some missing link; and even if you should ultimately fail, this habit of mind cannot but be of lasting value to you in other circumstances.

THE INFLUENCE OF QUININE ON THE TEMPERATURE OF THE HUMAN BODY IN HEALTH.

By H. C. Gell, M.R.C.S., L.S.A.,

and

Sydney Ringer, M.D.

As very much has of late been both written and said of the power which quinine possesses to lower the temperature in most fevers, as pyæmia, typhoid fever, &c., it appeared to the authors of this paper to be a question of interest how far this remedy, even in large doses, is capable of affecting the temperature in health. It must be clear to all persons that in disease there are new conditions present, which medicines may be able to control, and hence a drug may possess a very different power over a diseased body than over a healthy one. The conclusions, therefore, obtained from these observations by no means show that the same effects would be obtained in disease. The authors were most careful to conduct their observations with every precaution, to prevent any accidental and preventable circumstances affecting the observations.

The subjects of these investigations were a boy and a girl; the former ten years of age, and the latter thirteen. Both kept their beds the entire day on which the quina was given them; and the thermometer, which was placed in the axilla at 9 A.M., was retained there till 8 or 9 in the evening, the children being fed while lying down in bed. The temperature was read off at least each quarter of an hour by one or other of the observers. The girl was healthy; the boy recently recovered from rheumatic fever, which left behind it a slight mitral regurgitant murmur. His heart beat very quickly—as often as 110 in the minute.

We now give the effects obtained by the quina on the temperature in the following tables:—

On the Boy—

On three occasions he took 10 grs. of quina.

	Fall in temperature.	Rise in temperature.
Dec. 7th	None	None
" 10th, morning	0·2°	None
" 10th, afternoon	None	0·2°

On the Girl—

Dec. 6th	8 grs.	0·2°	None
" 7th	10 grs.	None	gradual to 0·6°
" 10th	12 grs.	None	None
" 11th	20 grs.	1·0°	
" 12th	20 grs.	0·4°	

From this table it appears quina does possess the power to reduce the bodily temperature; but to do so in any degree, large doses, as of twenty grains, must be given, and even then the depression is only slight, and may not amount to half a degree Fahr.

Next as to the time after the administration at which the depression began, and how long it continued:—

On the Boy—

	Dose.	Depression began in	Amount.	Lasted
Dec. 10th	10 grs.	1 h. 45 m.	0·2°	2 hrs.

On the Girl—

Dec. 6th	8 grs.	80 min.	0·2°	30 min.
" 11th	20 grs.	55 min.	1·0°	3 h. 15 m.
" 12th	20 grs.	80 min.	0·4°	45 min.

It thus appears the depression occurs in all instances at about the same time; and this similarity in time makes it probable that the slighter falls of 0·2° Fahr. were really due to the quina, and not to accidental causes, as shifting of the thermometer or exposure of the body.

The authors think they may conclude from these observations, although they are few in number, that even after large doses of quina, such as twenty grains, the depression of the temperature in health is very slight, and in some instances of very short duration.

Influence on the Pulse.

Boy.—The pulse was always so very rapid that in this respect he can scarcely be said to have been in health. It usually beat 110 in the minute. On the day when two doses were given to him the pulse was not altered in frequency on either occasion; on both, however, the strength of the pulse fell. On another day, as has been mentioned, he took but one dose of ten grains. For fifty minutes afterwards the pulse fell a little in frequency and gained in strength. The fall was from 108 and 112 to 104 and 96. After this it beat 120 in the minute, and at the same time lost in strength.

Girl.—Her pulse beat from 64 to 68 in the minute.

	Dose.	Rise began in	Rose to
Dec. 6th	8 grs.	35 min.	72
		(In 55 min. it had risen to 92)	
" 7th	10 grs.	15 min. (?)	
" 10th	12 grs.	95 min.	
" 11th	20 grs.	immediately	
" 12th	20 grs.	50 min.	

In the last observation the pulse diminished in frequency for about thirty minutes.

The time at which the maximum frequency was reached varied. On Dec. 6th it was reached in 55 min.; on the 7th, in 15 min. (?): on the 10th, in 120 min.; on the 11th, in 65 min.; on the 12th, in 100 min.

It thus appears that the time the pulse begins to be affected, and the time it is most influenced, is not in these cases related to the size of the dose. As there are so many circumstances which influence absorption from the intestinal canal, this fact will excite no astonishment.

In the case of the girl the pulse fell again on Dec. 7th in 170 min.; on the 11th in 195 min.; on the 12th it did not fall much. On no occasion did it return to the primary frequency it possessed in the morning before the quina was given, but the evening increase over the morning pulse was not greater than occurs in health. On those two occasions on which the temperature was decidedly depressed, the pulse beat at the fastest when the temperature began to fall, and became less frequent again when the depression in the temperature was attained. On every occasion, with the increase in the rapidity of the pulse there occurred also a loss of strength. On two occasions, when the pulse was at its quickest, the pulse became for a short time irregular and intermittent. On other two occasions the pulse, at first after the administration of the quina, beat a little slower, and also grew in strength; but this temporary loss in frequency and gain in strength, was soon followed by the opposite circumstances.

Other symptoms noted were—

Noises in the ears; buzzing sounds, and as if bells were ringing.—In the first and third experiments with the lad these did not occur. In the second, he complained of noises, which commenced 35 minutes after the medicine was taken, and lasted about 5 minutes. The dose on each occasion was 10 grs.

With the girl the phenomenon occurred on every occasion. When 8 grs. were taken, it began in 110 min., and lasted 60 m.; 10 grs., began in 120 min., lasted 80 min.; 12 grs., began in 40 min., lasted 185 min.; 20 grs., began in 15 min.; 20 grs., began in 40 min. On some occasions the buzzing sounds discontinued for a time, and then returned. In the first four observations the buzzing noises began a considerable time before the headache or dimness of sight.

Headache.—With the boy, during the first and third experiment no headache occurred. On the second occasion he complained of the pain in 25 minutes after the quina was given him; it lasted about 5 minutes, and then entirely left him.

With the girl, after the administration of 8 grs., headache began in 170 min.; 10 grs., in 175 min.; 12 grs., in 95 min.; 20 grs., in 30 min.; 20 grs., in 15 min.

The pain generally began after the pulse began to be influenced, but it was felt before the pulse had attained its greatest rapidity.

Dimness of sight.—With the boy, none such occurred on the three occasions of his taking quina.

With the girl, when 8 grs. were taken, none occurred. 10 grs., of left eye only, and began in 177 min., lasting 40 min.* 12 grs., none occurred. 8 grs., she complained of dimness, first of the left eye and then of the right; in this latter it continued; after it had disappeared from the former. 20 grs., appeared in 20 min., first in right, and then in left eye; it lasted 160 min. 20 grs., appeared in 25 min., in right eye only; it lasted 105 min.

It thus seems the dimness of sight appeared much about the same time with the headache.

The quinine sometimes made the children feel a little sick, and twice vomiting occurred in the evening following the administration of quina.

NOTES OF A CASE IN WHICH LARYNGITIS FOLLOWED THE ADMINISTRATION OF CALOMEL.

By **John Locking, M.D.**,

Physician to the Islington Dispensary.

The following notes may be considered of interest as illustrating the risk which may sometimes attend administration of calomel.

J. S——, aged twenty-six, of florid complexion and stout build, had always enjoyed excellent health up to the 17th of May, 1866. The son of a small farmer, and residing with his parents, he had been hoeing corn on the day preceding the above date, when, feeling fatigued and over-heated, he sat down under a hedge to rest. It was one of those bright sunny days in spring, a treacherous sharp east wind prevailing. He got a chill, which was succeeded on the following day by shivering and pain in the abdomen.

I was sent for on the 18th, and found him in bed lying on his back, with the thighs drawn upwards, and flexed on the abdomen. His pulse was small, hard, and rapid; urine scanty and high-colored; countenance anxious. In short, he was suffering from acute peritonitis. A large mustard poultice was applied at once, followed by hot linseed poultices. I prescribed small doses of opium to be taken frequently.

On the following day he was in much the same condition. I therefore ordered flannels, steeped in turpentine, to be applied to the abdomen as hot and as often as they could be borne, and the hot linseed poultices repeated in the intervals. Soon after this the activity of the symptoms began to subside, and on the 23rd he appeared free from all trace of the disease. But his bowels had not been relieved for four days, and, as he began to be uneasy, I thought it well to give a purgative. As he had had no mercury, and dreading to exhibit anything which might light up slumbering embers (if such remained) of the disease from which he appeared to be recovering so nicely, and as mercury is held to be in one of its actions anti-inflammatory, it being used, moreover, and recommended in the treatment of peritonitis, I thought the safest purgative I could give my patient would be a combination of that drug. I accordingly prescribed one grain of calomel, along with five grains of jalap, to be taken every three hours until the bowels were moved. Immediately after he had taken the sixth powder he had a copious evacuation, without griping or other unpleasant symptom. Other loose motions followed, and he appeared much better. But mark the sequel; before six hours had elapsed after taking the last powder, and within twenty-four hours of having taken the first, salivation set in, and he complained of great fulness in the sublingual region. He soon began to experience a little difficulty in breathing, and during the night of the 24th he was very restless.

Before my visit on the following morning he had filled the chamber vessel literally full of mucus and saliva. On inspection, I found the tongue, tonsils, uvula much swollen, the latter being of a bright red color; but there were no aphthæ nor any ulceration. Dysphagia and stridulous breathing now became marked features, the latter continually growing louder. A blister was applied over the windpipe, and hot poultices round the neck. On the evening of the 25th he could swallow nothing. On the morning of the 26th he was much worse; countenance turgid, lips blue, and the dyspnœa painful to witness. I informed his friends the case was hopeless unless tracheotomy was performed, but to this they would not consent. In the evening I was summoned to the patient in a hurry. Being knocked up with hard work, and feeling unwell, I sent to a neighboring practitioner, who very kindly went off at once to see him. In a note which this gentleman wrote as soon as he had seen the patient he says: "The man is very ill, and I have recommended leeches and ice, and I should think two grains of calomel every hour, to induce rapid mercurialisation, would be proper for him. The blister has risen well." Of course he was not aware of the train of symptoms, including mercurialisation, which had preceded the condition in which he had found the patient; he therefore prescribed for laryngitis in the orthodox manner. The leeches I was told were duly applied, but as the poor fellow was unable to swallow he could not take the calomel. He sank within eight hours of my neighbor seeing him.

The case gave me great anxiety at the time, and it left a powerful impression on my mind. Death was due to laryngitis. The inflammation in the windpipe was not a metastasis, for the peritonitis had subsided several days. Besides which, before the larynx became affected there was profuse salivation, accompanied with swelling and pain of the tongue, and swelling and redness of the tonsils, uvula, and parts adjacent. The inflammation appeared first in these organs, and then spread by continuity to the larynx. But the salivation, tonsilitis, &c., were, it is fair to assume, owing to absorption into the system of some of the calomel, which was taken as a purge. Six grains were taken in all, combined with thirty grains of jalap; and notwithstanding the fact that brisk purgation ensued, yet most violent symptoms of the physiological action of mercury showed themselves within a few hours.

This history conveys two lessons—1st. That purgation is no certain safeguard against absorption. 2nd. That the exhibition of a drug endowed with various therapeutical physiological actions may not be without danger.

Connaught-square, Hyde-Park, Oct. 1866.

◆

ON THE

MARSHALL HALL METHOD OF PRONE AND POSTURAL RESPIRATION IN DROWNING AND OTHER FORMS OF APNŒA AND SUSPENDED RESPIRATION.

WITH SOME SUGGESTIONS FOR ITS MORE GENERAL ADOPTION BY THE PUBLIC.

By RICHARD ELLIS, L.R.C.P. Edin.

IN the words of THE LANCET, "anything more simple, philosophical, or beautiful could not have been devised" than this parting legacy of Dr. Marshall Hall to our profession and to humanity. It is impossible, after reading of his last and trying illness, so touchingly portrayed by his widow and biographer, not to feel something akin to sacrilege in interfering with anything which he has touched with his pen at a time when, in a measure, he might be said to have died, like Nelson, "in the moment of victory."

Yet Marshall Hall, had he been still amongst us, would have been the first to welcome any modification or suggestion which time, experience, or the progress of science might have rendered desirable for the better carrying-out of his method. In this spirit, therefore, I approach the subject, and my apology for appearing before the profession is this. Since the time when Marshall Hall originated and published in the columns of THE LANCET his discovery of the physiological method of inducing respiration in these cases, I have watched its beneficient progress, and have corresponded with those who co-operated, and were otherwise associated with the discoverer in his labors. I believe that this method deserves to be tried in every case of apnœa in which there is the shadow of a chance. Inquiry has convinced me that this is far from being the case at present. I should be very sorry to fix or limit any time beyond which it would be useless to attempt recovery; the duration of life in apnœa has been proved to be so uncertain, and so dependent on varying conditions, and so many apparently hopeless cases have rewarded the perseverance of operators. But I do say, if this method is tried at all it deserves to be tried *well*, and not merely from *two to five minutes*.

I am well aware of the authorities which may be cited against this position; but it is my firm belief that the inquiry which was instituted by the Royal Medical and Chirurgical Society a few years since cannot be regarded as satisfactory by the profession, nor is it indeed looked upon as a settlement of the matter.

I have made extensive inquiries amongst seafaring men and those engaged in riverside occupations, and find that very few indeed have any just or useful idea of the proper treatment to adopt in drowning cases. On the other hand, there is often still a decided hankering after barbarous procedures, such as holding the patient up by the heels "to get water out of him," rolling on casks, rubbing with salt, &c., &c.

Now I freely admit that the Marshall Hall Method has been extensively diffused by the profession and others; and that the publications of the Royal National Life-Boat Institution, with their graphic illustrations, have been, on the whole, productive of much good. Still I believe that the written directions of this admirable Society are, in their present form, calculated to puzzle and confuse persons of limited education and intelligence. First they are told to treat the patient on his face and side, and afterwards—namely, "in from two to five minutes"—the contrary, or position on the back, is enforced. The directions, too, as to manipulations with the tongue (if understood) are calculated to deter many from making an attempt at resuscitation. The profession will agree with me that a bad case of apnœa or asphyxia is sufficiently painful to witness, and that sometimes closely corresponds with the description given by our great dramatist—

> "But see! his face is black and full of blood;
> His eyeballs further out than when he lived,
> Staring full ghastly, like a strangled man;
> His hair upreared; his nostrils stretched with struggling
> His hands abroad displayed as one that grasped
> And tugged for life, and was by strength subdued."

To persons of intelligence and education the present directions are sufficiently explicit; but there is a class—and it is a large one—most frequently present in drowning accidents, too, to whom the terms *inspiration, expiration, prone,* &c., convey little if any meaning. To bring the subject down, then, to the capacity of every member of society, is one of the objects of the present paper. From the considerations above stated I have reduced "the Ready Method" of Dr. Marshall Hall—in its essentials of prone and postural respiration—to a formula of seven sentences. I may say that the idea has already received the warm approbation of many members of the profession and others interested in the subject; but it is here submitted through the columns of THE LANCET for a fuller verdict.

Instantly place the patient on the face and side, supporting the head.
Unfasten the clothes about the neck and chest, braces, &c.
Wipe and clear the mouth and nostrils.
Raise and support the chest on a folded coat or bundle.
Roll the patient constantly and gently from the face to the side, and back again, occasionally changing the side, supporting the head.
On the completion of each turn to the face make a brisk pressure on the back, between and below each shoulder blade.
Dry and rub the patient briskly, rubbing upwards.

Should these suggestions receive the sanction of the profession, it might be well to have large placards printed and posted about river-sides and bathing places. In every town, I doubt not, there are benevolent persons who would gladly contribute towards this object; in my own town many I know have offered to assist.

Before I leave the subject I wish to say, is it not an oversight, on the part of our profession, that the name of Marshall Hall is not linked with any scholarship or exhibition at any of our universities or colleges? It is true that it could hardly add a more varied lustre to a name "that posterity will not willingly let die;" and it may be said that such foundations are liable to abuse. But this last might be said of many good objects; and it is, therefore, no valid objection to their use. For the younger members of our profession no name in the modern history of medicine could be a more worthy association, or example offer a more powerful incentive to industry. I hope the subject may be taken up by those of standing and influence and others in the profession, with whom I would gladly co-operate.

Newcastle-on-Tyne, Oct. 1868.

A CASE
OF
EMBOLISM OF THE BRACHIAL ARTERY.

By J. F. Wilkin, M.R.C.S.

The detachment of fibrinous deposits from the interior of the heart is now so thoroughly recognised as one of "the ills to which human flesh is heir" that it seems almost to require an apology from me in soliciting space for the following case. But although it contains nothing that has not already been brought before the notice of the profession in such a manner as to leave little for feeble efforts like mine, still I believe cases like the following are sufficiently rare to prove interesting, if only as an illustration of what we find stated by the late Dr. Kirkes in his admirable essay on Embolism,* and also in the works of Walshe and others.

Lady H. M——, aged fifty-two, of delicate fibre, and the mother of twelve children, with a family history of gout on both sides. Until now she has not had any serious illness; but has had slight fainting fits occasionally for some years past. Had a sharp attack of measles (*primary*), then prevalent in her parish, on the 18th of March, 1867, coupled with an unusual amount of bronchitis and catarrhal symptoms. On auscultation, a loud systolic murmur was heard all over the cardiac region. She did well, however, and was quite convalescent on the 25th, when, without permission, she unfortunately had a warm bath (to which she attributes her malady), instead of the cold one she was in the habit of having daily when well. She remained in the bath about three minutes; and after completing a hasty toilet and walking into an adjoining room, she suddenly experienced the most acute pain in her left arm, extending from above the elbow to the wrist, came over faint and giddy, vomited several times and "felt very bilious and unable to talk." I ordered stimulants and perfect rest, and saw her again in the evening, when I found the left arm pulseless, and much cooler than the right—in fact it was an unmistakable case of embolism of the brachial artery at its bifurcation. She was placed in bed (as quietly as possible), and the arm encased in cotton-wool. She complained much of vertigo; but slept soundly during the night. On the following morning the limb, although well wrapped up and in the horizontal position under the bedclothes, was quite blanched, almost cold, and somewhat shrunk. Dr. Walshe, of London, was then telegraphed for, and, on seeing the case with me, corroborated the diagnosis previously given. Perfect rest was enjoined, and an anodyne liniment was prescribed to relieve the very severe pain felt in the hand and arm. Ammonia and potash were given internally, with the view of their acting as solvents on any lesser portions of coagulated fibrin possibly then floating in the circulating fluid. Fortunately, the vitality of the limb was preserved through the anastomosing branches; and the progress, though slow, was on the whole satisfactory until the 13th of April, when gout showed itself in the same hand, and resisted for a time every effort to dislodge it. However, on the 7th of May she was much improved, and could use the hand a little. The arm was still pulseless, but of its natural size and temperature; and the patient felt well enough to start for a sojourn on the continent, where she remained six months, during which time she *lost all the nails on the affected hand.* On her return, much of the former strength and usefulness of the limb had been regained, almost the only difference being that the left hand and arm required more clothing than the sound limb. The pulse had now returned in the wrist, but, as might be expected, it was not so full as in the right arm.

I am not aware that the intense pain complained of in this case is usual; it probably owed its origin to the situation of the clot placed as it was in such close proximity to the principal nerves of the limb, and tightly compressed under the tendinous expansion of the biceps muscle. That there was a good deal of distension and perhaps partial laceration of the coats of the artery seems proved by the fact that there existed for some time discoloration of the integument immediately over the point of obstruction, but no tumour or other indication of aneurism presented itself. The vomiting is, I believe, a usual occurrence in these cases, but the mode of its origin is difficult to explain. The vertigo and head symptoms were probably the result of a suddenly increased current of blood sent to the brain, though at the time it was feared that a clot had probably found its way into some of the cerebral vessels; but as there were no permanent head symptoms, such could not have been the case. It is an interesting point in connexion with this case, as to whether the prostrating effects of the warm bath tended in any way either to produce coagulation, or to induce separation of a clot long since formed and connected to one of the cardiac valves. Or was the latter merely a coincidence? I am inclined to think it was; as had it been an *immediate* clot it would scarcely have formed so complete a barrier as to resist the full current of blood almost instantaneously, as it did. The happy termination of this case, which at one time presented a most serious aspect, fully illustrates the wonderful capabilities of the *vis medicatrix naturæ*, even at the age of fifty-two, and in a delicate subject with long-standing cardiac disease.

Staplehurst, Oct. 1868.

---

* Medico-Chirurgical Transactions, vol. xxxv.

TRAUMATIC TETANUS TREATED BY THE TINCTURE OF THE CALABAR BEAN.

By C. V. Ridout, M.R.C.S.

Mr. L——, a farm bailiff, aged forty-seven, of good constitution and temperate habits, when returning home on the evening of April 29th, was thrown from his horse in consequence of the animal shying, and fell upon his hands. When I saw him I found him suffering from a compound dislocation of the first phalanx of the left thumb, with extensive injury of the liagments and muscles of the right wrist, but without fracture. There was also a simple dislocation of the first phalanx of the right fourth finger backwards, and a slight wound over the right eyebrow, but without any symptom of concussion or other injury of the head. The dislocations were reduced with some difficulty, owing to the nervous temperament of the patient; but he progressed favorably till May 12th, when some threatenings of tetanus were observed in the form of pain and stiffness at the back of the neck. These symptoms increased till on the 17th May the jaw was firmly fixed; the teeth could not be separated more than a quarter of an inch, and the patient could only swallow liquids from a spoon. There were occasional twitches of the face, clenching of the hands, and great restlessness.

May 18th.—Mr. S. Lane, of St. Mary's Hospital, saw the patient with me in consultation, and recommended a trial of the extract of Calabar bean, as recently advocated by Dr. Eben. Watson, of Edinburgh. A solution was made by rubbing down eight grains of the extract in an ounce of spirits of wine, of which ten minims, equivalent to one-sixth of a grain of the extract, were given every hour.

19th.—Has passed a quieter night, and slept twice for two hours; pulse 80, regular; can speak distinctly, but cannot open his mouth wider than yesterday; complains of pain in the back; wound in the thumb looking well.

20th.—Symptoms much the same; takes nourishment freely, but has some difficulty in swallowing; pulse 80; bowels relieved.

21st.—Two a.m.: I was sent for to see him, and found him unable to lie down from a sense of suffocation; had twitching in throat, and the risus sardonicus was well marked; pulse 100. Increased the dose of Calabar bean to fifteen minims every hour. Bowels open; urine passes freely.—Eight p.m.; Pulse down to 80; has had some sleep, but the twitchings continue; has found relief from a bladder of ice applied to the back of the neck.

22nd.—Seven a.m.: Has passed a better night; twitchings less, but is still afraid to lie down. Dose of Calabar bean increased to twenty minims (one-third of a grain of the extract) every hour.—Eight p.m.: Twitchings and sense of suffocation relieved: has been able to lie down and sleep for an hour. The same dose to be continued every two hours during the night; ice-bladder continued.

23rd.—Tetanic symptoms decidedly less, but there is a good deal of mucous expectoration. Same dose of the bean continued.

24th to 29th.—Suffered from occasional paroxysms of spasm, but with no material aggravation or mitigation of the symptoms.

26th.—The dose was increased to thirty minims (half a grain of the extract); nourishment taken freely; pulse not more than 80 at any time.

29th.—Had a severe seizure at two p.m.; teeth firmly clenched, with cramps of hands and feet. Dose increased to forty minims (two-thirds of a grain of the extract).

30th.—Passed a good night; spasms subsided; suffers much from cough and expectoration; is decidedly weaker; bowels acted twice involuntarily; pulse 120.

31st.—Had more difficulty in swallowing during the night, apparently from the accumulation of mucous; was seized with convulsions and choking at five a.m., and died two hours afterwards.

The Calabar bean was tried in this case in consequence of the very successful results obtained from its use by Dr. Eben. Watson. I much regret that this case cannot be added to the list of its successes, although it had a fair trial, and the doses given were considerable. It appeared to retard the progress of the case and to mitigate the severity of the symptoms, but never completely to control them.

Egham, July, 1868.

ON A CASE OF

ACUTE RHEUMATISM FOLLOWED BY CHOREA.

By H. J. Branson, M.D., F.R.C.P.E.

The merit of first observing the connexion of chorea with rheumatism is due to Dr. Copland; he looked on it as a metastasis, or extension of rheumatism to the membranes of the spinal cord. This subject is very interesting, having engaged the attention of such men as Stoll, Copland, Abercrombie, Begbie, Bright, Gabb, Richard, and Trousseau. This last authority says, that of all the pathological states predisposing to chorea, rheumatism is the most marked and the least questionable. Dr. Botrel, in his thesis of "Chorea considered as a Rheumatic Affection" (1850), propounded the opinion previously expressed by Dr. Hughes, that the former complaint was only a special manifestation of the latter. But Dr. Sée has brought out this fact very prominently (in Les Mémoires de l'Académie de Médecine, vol. xv.): he says that of 109 cases of rheumatism admitted into the Hôpital des Enfans 61 were complicated with chorea. Dr. West, in summing up his opinion, says, "Be the exact relation what it may, it does seem that rheumatism, or the rheumatic diathesis, is a very powerful predisposing cause of chorea." Dr. Watson says, "Judging from my own experience alone, I should not say that chorea was often associated with acute rheumatism;" but he does not at all doubt it. Dr. Begbie, after relating cases, writes: "Keeping these facts in view, and calling to recollection the several cases which have been recorded elsewhere with the purpose of illustrating the connexion of the two diseases, I cannot help coming to the conclusion, that the simple and true view of their relation is to be found in the morbid condition of the blood which is admitted to exist in the rheumatic constitution; and this explanation will apply equally to chorea occurring in individuals or families inheriting the rheumatic diathesis—to chorea occurring in connexion with rheumatism, but without the cardiac complication, and to chorea associated with pericarditis, or both; the inflammatory affections of the fibrous tissues, as well as the spasmodic affection of the muscles, and the derangement of the nervous system, originating in the same specific disorder of the circulating fluids." Again, Dr. Watson says, "Acute rheumatism is a blood-disease, and it is most likely that the unhealthy blood circulating through the several organs is the common source and cause of the articular, cardiac, and spinal symptoms, and the bond of connexion between them."

J. T. S—— came under my care on the 7th of July last. He is a well-made boy, twelve years of age, fair hair, and blue eyes. When I first saw him he was suffering from acute rheumatism of both shoulder-joints, which were very much swollen and intensely painful on pressure; pulse quick; tongue furred; perspiration acid in smell. He was ordered a brisk purgative, and then put under the bicarbonate of potash, ten grains every three or four hours, and Dover's powder, four grains every night if necessary. He made a good recovery under this treatment; in fact, in about a month he was pretty well again. At the beginning of September I was requested to see him again. I found him suffering from chorea: the left side of the face and upper limbs were affected most; the legs were steady, as he could walk across the room without much effort. His mother informed me that the urine frequently had a lateritious sediment in it. The bowels are variable, but not constipated as a rule; the appetite ravenous. There has never been any heart complication throughout. He is progressing well under strychnine and iron and a plain nourishing diet. The family history does not point to the rheumatic diathesis.

Doncaster, Oct. 1868.

◆

ON
AMPUTATION OF THE THIGH BY SEPARATION OF THE LOWER EPIPHYSIS.

By George Buchanan, A.M., M.D.,

Surgeon to Glasgow Royal Infirmary, Professor of Anatomy in Anderson's University, Etc.

In cases of injury or disease demanding amputation in the lower part of the thigh, the operation known as "Carden's" is generally admitted to give the best results, both as regards safety and the shape of the stump. My own experience, especially during the past two years, in which I have operated many times, is decidedly in favor of that method when practicable.

But I desire to call attention to a method of dividing the bone in patients under puberty, which I have practised most successfully in two cases, and which I intend to adopt in all similar instances.

Case 1.—A boy, aged ten, had his leg crushed by machinery close up to the knee. I performed amputation by a long anterior flap. After I had cut through the soft parts, I drew the knife round the condyles to divide the periosteum, where I meant to apply the saw, when I found that it passed into the soft cartilage separating the inferior epiphysis from the shaft of the femur. I laid aside the knife, and by using gentle force easily broke off the epiphysis, leaving the shaft with a rounded end, in which neither cancelli nor medullary cavity were exposed. The wound healed with great rapidity, and it was the most perfect stump I ever saw.

Case 2.—A boy, aged twelve, was admitted under my care in May, 1868, with disease of the knee-joint. Treatment failed to arrest its progress, and in the beginning of October there was evidence of degeneration of the cartilages. Amputation was imperative. The operation was performed in the same way as in the last case; this time the separation of the epiphysis being kept in view from the first. A large anterior flap was formed by entering the knife at the condyle, extending a straight incision about three inches perpendicularly downwards; then making a semilunar sweep in front of the tubercle of the tibia, and carrying the knife in a straight line to the condyle opposite the point of entrance. A semilunar posterior flap, half the size, was then made. The knife was then drawn round the cartilaginous interval between the shaft and the epiphysis, and sunk into it a short way. By now pressing my thumb-nail into the groove thus made, I had no difficulty in breaking off the lower epiphysis, leaving the shaft of the femur with a rounded end, in which neither cancelli nor medullary cavity were exposed. The femoral artery was effectually secured by torsion, as also three small vessels. The edges of the wound were brought together by silver sutures. The patient was placed in bed, with the stump resting on a pillow, no dressing of any kind being applied, as is my usual practice in managing such cases. The stump promises to be as perfect as in the last case.

Three advantages seem to me to attach to this plan, which is applicable to all cases of amputation of the thigh in patients under puberty.

1st. The shape of the end of the bone renders the stump exceedingly favorable for the adjustment of an artificial leg.

2nd. The end of the bone, being rounded, nodular, and smooth, needs little, if any, alteration by reparative processes during the cure.

3rd. The risk of purulent absorption and pyæmia, which always attends the exposure of the cavity of a bone, whether cancellated or medullary, is in this form of amputation absent, so far as the bone is concerned.

I therefore commend this operation to the attention of practical surgeons in operating on patients under puberty.

Glasgow, October, 1868.

◆

OXIDE OF ZINC AS A THERAPEUTIC AGENT.

By J. Waring-Curran, L.K. & Q.C.P.I., &c.

The therapeutical importance of oxide of zinc as an article of the materia medica has induced me to impartially and fairly test its influence and effect in those several diseases which its administration would most likely benefit, and the result of my experience may, I think, be confidently relied upon by any who may feel inclined to exhibit it in similar affections.

Phthisis.—Oxide of zinc will be found of great valve in the earlier stages of this distressing disease. It seems to steady the nervous system and act as a sedative to the wandering pains and general depression which exist at the commencement of the complaint. In the later stages, where profuse sweating and colliquative diarrhœa harass the patient and quickly lower the vital capacity, its very wonderful effect of checking the latter and arresting the former is best learnt from the lips of the sufferer himself. It certainly is one of the physician's grandest weapons, and an agent, once employed, never again to be dispensed with. I prescribe it in two-grain doses, with extract of conium, in the form of pill, giving three in the day to begin with, and gradually increasing the dose every week or so, until fabulous quantities of the oxide are taken daily.

Epilepsy.—The oxide of zinc in pill and the bromide of potassium in mixture form a method of treatment I consider not to be equalled, when assisted by the occasional application of Chapman's spinal ice-bag, in cases of epilepsy. The oxide of zinc I have administered alone, giving camphor julep as a placebo, in some severe forms of the disease; and although under its use the number of attacks became less, and the general health of the patient improved, I did not obtain the same satisfactory results as when combined with the bromide. The bromide I have also exhibited *per se*, but experience has taught that the one is essential to the other, and that the two drugs combined form an indispensable method of treatment, by steadying the system generally, equalising the circulation of the nervous centres, and thus warding off the attacks of the most distressing complaint which comes within our province to treat.

In *Spermatorrhœa* and *Gleet* I find it a drug of the greatest importance. In the former, I have given it during the day, with some camphor and conium at bedtime, with the happiest results. Under its administration in the latter the mucous membrane appears to take on healthy action, and we get speedy riddance of a class of patients who hitherto gave no little trouble to their attendant, whilst in many instances they themselves became hypochondriacs.

Chronic Diarrhœa and *Dysentery* are best and most speedily treated by the oxide of zinc.

In *Hysteria* I have remarked it a more reliable efficacious preparation than the over-estimated valerianate.

In *Delirium Tremens* when the morphia or cannabis has done its duty, the after-treatment by zinc is something to be observed rather than described; the constant dread, restlessness, and disturbed sleep are quickly overcome by the bracing agency of the drug. "Every pill I swallow steadies me," they tell you. I had a patient who never went to town without a box of pills in his pocket for, if his story is to be believed, "they keep off the after consequences" of the stimulating beverages in which he indulges. Suffice it to say he was the frequent subject of delirium tremens. I brought him through one severe attack, and although his habits are not changed, he has not had a similar one since; but he takes care to carry the prescription in his pocket-book, and attributes his good fortune to the medicine, which he looks upon as a prophylectic.

When commencing the administration of oxide of zinc, care must be taken not to give it upon an empty stomach, as it produces a nausea which gives the patient a dislike to the drug, and an antipathy difficult to overcome by subsequent reasoning.

Spalding, Oct. 13th, 1868.

HOW AN OUTBREAK OF TYPHOID WAS PRODUCED.

By Thomas Buzzard, M.D.,

Assistant-Physician to the National Hospital for the Paralysed and Epileptic.

Between the 1st and 13th of October last year seven persons out of a certain household of forty were attacked with typhoid, which has happily been in no case fatal. At first investigation seemed likely to throw no light on the cause of the outbreak. There had been, it was said, no bad smell, and the water-supply was above suspicion. Various persons inspected the house, a large old-fashioned one, and found nothing. However it was clear that there must be "something wrong with the drains," although it was not so clear that we should find out what it was. Further search was insisted upon, workmen were employed, and, little by little, there was found what I am going to describe.

On the second floor, next to the bedroom occupied by the first patient attacked, there is a watercloset, the seat of which is close to a good-sized window. There was no smell perceptible from the closet, the apparatus of which *appeared* to act perfectly. When you open the closet window you look out upon the ordinary leaden rain-gutter, bounded by a parapet. Close to you is a hole, the opening of a short pipe of communication between this gutter and the rain-conduit outside, and this is all that, under ordinary circumstances, the eye falls upon. But it happened that a long-necked workman, craning over the parapet whilst the closet valve was being lifted, saw a rush of water fall into the rain-pipe head, which he could, in this way, just contrive to see. It was discovered, in a word, that the closet drained, not into a proper soil-pipe, but into the rain-pipe. The closet being taken up and examined, a four-foot lead pipe, with a fall of only three inches in this length, was found to be the channel by which the soil was *intended* to pass into the rain-conduit. This pipe was nearly full of soil, the gradual accumulation perhaps of years. The rain-pipe dipped below into a small cesspool full of soil. From the cesspool passed an old brick drain, with no attempt at a fall, which contained two or three inches depth of soil.

I have thought it well to tell this story, not because in all probability such an ingenious arrangement for producing disease is at all rare, but on account of the circumstances which rendered its discovery difficult, and, as happened, almost accidental. The connexion between the closet and the rain-conduit could not be seen at all from below; whilst, from above, it was only to be observed by an almost dangerous stretching of the body over the parapet. Whenever the closet window stood open, and this was almost constantly the case, the emanations from the whole track of soil-conduit—from the closet above to the brick drain below—had the opportunity of passing up into the lead gutter, a few inches under the open window. That the emanations availed themselves of this favorable opportunity, and thus found their way into the house, the occurrence of the seven cases of typhoid leaves in no doubt.

Green-street, Grosvenor-square, Nov. 1868.

A CASE OF MATERNAL IMPRESSION.

By E. Child, M.R.C.S.

On the 26th of August last I was summoned at eleven P.M. to attend Mrs. A—— in her first labour. On arriving at the house I found the pains very lingering and slight; the os was dilated to the size of a sixpenny-piece. I could not detect the presentation. Finding I should not yet be wanted, I returned home telling the nurse to send for me when the pains came on stronger. At six A.M. the following morning I was called up. The labour was progressing, and the breech presenting. It continued to do so until four P.M., when as soon as the breech passed the os externum, the whole body of the child was expelled with some degree of force. It was dead and from the peeling of the skin I conclude it had been so for some time. When I touched the cord it came away in my hand, leaving the placenta in utero, which I extracted after a little manipulation. It was a fine, full-grown male child, formed naturally as to its body, with the exception of the nails on the thumbs, which were like those of a rabbit. On examining the head I was surprised to find the parietal, frontal, and part of the occipital bones wanting; and at the space corresponding to, but larger than, the anterior fontanelle, was the brain entirely denuded of skin or membrane, not even being covered with arachnoid. There was a little hair over the eyes, none elsewhere. The eyes, palate, and tongue were similar to those of a rabbit. At first I was inclined to think that in the absence of these bones the action of the uterus had squeezed the eyes into the shape I had found them, but on making inquiries as to any fright, and having heard the following story, I was induced to consider it a case of maternal impression.

During the second month after conception the mother went to a penny show, in which she saw a trained horse pull the trigger of a pistol pretending to shoot a rabbit. A dummy was then thrown out; the back of its head was bleeding, having to all appearances been shot off. This corresponded, as the mother-in-law declares, to the mark on the child's head. My patient seems never to have forgotten the circumstance during the remainder of her pregnancy, and was considerably frightened at the time. I was lucky in having to contend with a breech presentation; if it had been a natural one I should either have been puzzled to ascertain what it was, or, perhaps have inadvertently pushed my fingers through the brain itself. The mother did well, and is now quite recovered.

New Malden, Sept. 1868.

A CASE OF SPONTANEOUS EVOLUTION.

By P. Macdonald Bell, M.B., C.M.

In the spring of 1867 I was called to attend a confinement in the village of Blairlogie, Stirlingshire. The case was in charge of a midwife, who, six hours before my arrival, had delivered the woman of one child of twins, the second remaining in utero. On examination, I found the outlet of the pelvis occupied by a large, soft, round body, which so completely filled the space as to render examination a matter of great difficulty. At first I thought the child's head was presenting, and that the softness of the mass might be accounted for by a hydrocephalic condition. At the same time I was not at all satisfied with my diagnosis, inasmuch as I could not detect a face, nor could I trace anything corresponding to a normal neck or shoulder. I got, however, a sulcus between two ribs (as I found afterwards), which I was induced to regard as the sagittal suture. I certainly could come to no satisfactory conclusion. Birth shortly afterwards took place without any alteration in the child's position, the pains being strong and forcing. The presenting part was in the right hypochondriac region, which was bulged out into a complete hemisphere. The child was quite doubled up, its head resting upon its heels, and a second globular swelling formed upon its throat. It was perfectly formed, of a good size for a twin, and, according to the mother's reckoning, was at full time. It was dead of course. The first child was somewhat tedious in the birth, but came away naturally. The mother (a multipara) was a stout, healthy young woman, short of stature, pelvis and passages roomy. She made a good recovery.

Pudsey, Leeds, Sept. 1868.

ON THE

ANTISEPTIC LIGATURE OF ARTERIES.

By C. F. Maunder, F.R.C.S.,

Surgeon to the London Hospital.

The ligature of the larger arteries is an operation of great interest to the surgeon, and of vital consequence to a patient. The operation is often of necessity undertaken under circumstances of unusual risk, and it is especially here that all aids to a successful issue should be imported into the treatment.

I hasten therefore to record the fact that less than five weeks ago I ligatured the left common carotid artery, on the antiseptic principle, in a man, twenty-six years of age, and the subject of three surgical aneurisms. The vessel was secured on the plan recommended by Professor Lister, the ligature having been soaked in carbolic acid, cut short, and the wound closed, &c. Scarcely any action was set up about the wound, and in less than a month from the deligation (as I am informed by the patient's medical attendant, who watched the case very closely) the wound had healed, the silk thread did not come away, and he was gone to the seaside. On a former occasion, having ligatured the subclavian and common carotid arteries in the usual way, I mopped out the incisions with carbolic oil, and covered them in with carbolic dressings. Up to the sixth day, when the subject of this double ligature died, almost no action had been set up in the wounds. I quite believe the antiseptic ligature of arteries will greatly diminish the risk of secondary hæmorrhage.

October 26th, 1868.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

> **Nulla autem est alia procerto noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—Morgagni *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

KING'S COLLEGE HOSPITAL.

TWO CASES OF STONE IN THE BLADDER; ENORMOUS SIZE OF THE CALCULI.

Every now and then single instances are met with where a calculus of very large size has been found in the bladder, and where an operation has been performed for its removal; but it is rare that two such cases present themselves at the same hospital within so short a time as elapsed between those described below. The remarkable features in each case consist in the great size of the foreign body, the length of time it had existed, and the enormous amount of suffering produced, and in one case voluntarily borne by the patient. In the instance of the female patient, it is almost incredible that the existence of the foreign body should have been overlooked so long. It may be a question with some whether a surgeon was justified in endeavoring to remove so large a stone by operation; but considering that a stone, however large, may be much reduced in bulk by proper instruments working through an artificial opening into the bladder, it would scarcely be right to leave a patient to the terrible misery experienced in this case. There can be little doubt that in Mr. Henry Smith's case damage was done to the bladder, notwithstanding the extreme care taken to prevent this; but it must be borne in mind that the nucleus in this stone was a large mass of oxalate of lime, and that if it had been possible to break this in pieces there would not have been any need to use the kind of instruments or the force which was found actually necessary for the extraction of this large calculus. In Sir William Fergusson's case, although this surgeon was expecting to have to break the stone, and was prepared with a formidable lithotrite to do so if necessary, the stone was at least an ounce less in weight than in Mr. Smith's patient; and it was of such a shape, and fortunately lay in such a position, that it was caught and extracted entire by Sir William in one of the most masterly manœuvres, perhaps, ever witnessed in an operation for lithotomy.

(Under the care of Sir William Fergusson.)

The patient, S. B——, a man of small build, fifty-five years of age, and presenting the aspect of considerable suffering, was admitted into King's College Hospital on October 19th. The irritation of the bladder was so great and continuous, that he was compelled to have a utensil constantly by him to allow of the escape of water. On examination with the sound, a stone was at once felt, apparently almost filling up the cavity of the bladder, but the instrument could be passed between the calculus and the bladder. The stone could be readily felt by the finger in the rectum. It appears that the patient had been suffering for nearly twenty years from the stone, and had been advised to undergo an operation, but had persistently refused, until his sufferings became so urgent as to render life insupportable.

Operation.—Oct. 24th: The patient being placed under the influence of chloroform, and secured in the lithotomy position, Sir William Fergusson introduced a large staff, grooved in the median line, and commenced the operation by making an incision on the left side of the raphé, carrying it downwards to the extent of four inches, and cutting deeply through the superficial tissues. He then applied the point of the knife to the upper part of this cut well above the anus, and carried the instrument across the raphé downwards and outwards to the right to the extent of an inch or more. The knife was then carried into the groove of the staff, and onwards into the bladder. The prostate on the left side being freely cut, a slight incision was then made on the right side of the gland. The finger was now used to dilate the internal wound, and forceps of only moderate size being introduced, an attempt was made to seize the stone, but in vain. A second attempt was made, and the stone was seized, but the resistance was so great that the instrument slipped whilst the movement for extraction was being performed. Sir William Fergusson now very deliberately examined the position of the stone, and introducing the forceps a third time, obtained a firm grasp of the calculus, and by slowly and continuously practising the movements of extraction, well downwards in the direction of the axis of the pelvis and laterally, the entire stone was in a brief time extracted entire. The calculus weighed five ounces, was ovoid in shape, and flattish; its circumference measured eight inches, and its largest diameter upwards of three inches. It was caught in such a position that the blades of the forceps embraced the apex or lower angle of the stone, and thus was presented by the forceps and the stone almost a complete cone, and in this way the dilatation of the parts was effected in the best manner.

26th.—Patient doing well; pulse 98; no pain;

has an attack of bronchitis; has suffered very little from shock.

(Under the care of Mr. Henry Smith.)

E. G——, aged thirty-eight, a widow, admitted into King's College Hospital Sept. 2nd. She states that about ten years ago she first experienced pain in the bladder, and other symptoms, which gradually increased in severity. She applied to an hospital for diseases of women, but she got no relief from her sufferings. She was subsequently treated for uterine disease elsewhere, but getting no relief she again applied to the hospital she had attended before; but it does not appear that the bladder was examined, although the uterus was. She then applied to Mr. Henry Smith, who suspected stone, and admitted her to the hospital.

On examination with the sound, a foreign body was struck about half way down the urethra, and on examining by the vagina the bladder appeared to be completely filled with a solid mass. The woman was closely questioned as to whether she had ever introduced any foreign body, but stoutly denied this. The patient was in the most pitiable condition, not having the slightest control over the bladder.

On a second careful examination which Mr. Smith made, it was found that the sound could be passed between the stone and the base of the bladder. It was found, on attempting to inject this viscus with warm water, that it would not contain more than a drachm or two.

The patient was kept quiet in bed for some little time, and on Saturday Oct. 3rd, Mr. Henry Smith performed the operation as follows. A staff, grooved in the centre, was passed into the bladder, and there held by Mr. Wood. Mr. Smith then made an incision through the upper part of the vagina into the anterior portion of the urethra, and prolonged this for about an inch and a half backwards. On introducing the finger into the bladder, he felt the stone filling up the cavity of the bladder. Finding it so large he introduced a powerful lithotrite through the wound, and attempted to break the stone, but it was found impossible to open the blades sufficiently. A smaller lithotrite was passed through the urethra into the bladder, but was useless to attempt to grasp this large stone within the blades. Mr. Smith then introduced a pair of powerful lithotomy forceps, and seized the stone, but it was at once seen that it would be impossible to extract it. However, in the attempt, portions of the phosphatic covering of the stone were brought away; and it was now evident that the operation, if completed at all, could only be effected by lessening the size of the foreign body, Mr. Smith introduced a strong pair of bone forceps, and by repeatedly applying it, and using great force, he was enabled to break off all the outer covering of the stone, and bring it away, but the nucleus could not be broken. The opening in the bladder was now somewhat enlarged, and a scoop with a curved extremity was carried as carefully as possible behind the stone, and the latter was extracted.

The operation lasted upwards of half an hour, and the woman was greatly exhausted when she was put to bed.

The foreign body, when examined, and put together, was found to consist internally of a large nucleus of oxalate of lime, nearly as big as a billiard ball, and an external coating of phosphates. The mass that was collected weighed five ounces and a half, and numerous fragments were thrown away with the blood and lost during the operation.

The shock of the operation was very great, and twenty-four hours afterwards she appeared to be rapidly sinking, but she rallied considerably, and on the 5th was much better; but she complained of severe pain in the abdomen, and died at 8 A.M. on the 6th.

Post-mortem examination.—On reflecting the abdominal walls there were evidences of extensive peritonitis, especially on the left side. The wound in the vagina and urethra was about one inch and a half long, and well away from the peritoneum. On examining the bladder it was found to be considerably thickened, and on each side the mucous membrane to the extent of at least half an inch had been separated. At the apex, and toward the left, the tissues were much soddened and in a sloughy condition, and readily admitted the finger. There was not any sacculation of the bladder. The right ureter was much dilated, and the corresponding kidney was converted almost into a cyst.

ST. MARY'S HOSPITAL.

(DEPARTMENT FOR DISEASES OF THE SKIN.

CASES OF PSORIASIS.

(Under the care of Dr. Cheadle.)

The following cases illustrate very well three varieties of psoriasis, with their appropriate treatment, which in each instance was attended with a successful result.

Case 1. *Acute general psoriasis.*—The patient was a robust-looking man of twenty-seven, a chimney-sweep by trade, who, with a rare regard for cleanliness, was in the habit of washing himself from head to foot every evening, after his day's work, in a strong solution of soda, for the purpose of thoroughly removing the soot. He was also a great beer-drinker, and during the hot weather of June last had taken more than usual, sometimes as much as four or five quarts a day. About five months before he came to the hospital he first noticed the appearance of an eruption in a small patch, the size of a fourpenny-piece, which came on the right shin. It was scaly and perfectly dry, and not sore or tender in any way. This grew to the size of "the top of a teacup," and then the eruption made its appearance on the left leg, spread up the thighs, then to the arms, and lastly on the trunk. It was dry, scaly, red, and annular in form—as he expressed it, coming in "round rings, like the ringworm."

When first seen (on June 11th, 1868) the only parts of the body free from eruption were the neck, chest, belly, and back of the hands. On the sides of the trunk and the arms, where the patches were tolerably distinct, their form was annular, and the rings in some cases two to three inches in diameter, the centre being occupied by healthy skin. On the legs the rings had coalesced into one uniform sheet, covering the greater part of the limb from the knees to the ankles. The eruption throughout was somewhat raised, of a bright-red color, and covered with large white scales, which were easily detached and soft, but not friable. There were no vesicles nor papules, nor was the slightest sign of any exudation perceptible. No history of syphilis or hereditary tendency could be made out. He was ordered small doses of arsenic and iodide of potassium, and an ointment containing nitric oxide of mercury and creasote. When the man was seen again a week afterwards he was covered with eruption from head to foot, so that hardly a vestige of healthy skin could be perceived. The back of the hands, chest, and abdomen, which had been free before, were of a uniform scarlet color, and covered with scales, but perfectly dry, and not tender. The scalp was filled with dry scurf, and the face red and rough. The gums and buccal mucous membrane were also very red, and on the latter there were superficial ulcerations along the line of the teeth. The skin felt excessively hot to the touch, and the man complained of a constant sensation of burning heat and itching. The temperature of the axilla was 100·4°; the pulse 108, soft and full; the tongue much coated, and bright-red along the edges.

The patient was at once admitted into the hospital, remaining under Dr. Cheadle's care, by the kind permission of Dr. Handfield Jones. A warm bath was given every night; after which the body was sponged over, while still moist, with a weak lotion of nitric acid and glycerine. This greatly relieved the burning and irritation. Zinc-and-lead ointment was applied to the limbs; and small doses of carbonate and sulphate of magnesia, in quassia mixture, ordered to be taken three times a day; the bowels, which were very costive, having been previously freely opened by a compound jalap powder. In the course of four days the redness of the skin began to fade on the chest, the temperature went down to 99·5°, and the tongue became cleaner. The desquamation was very great, the bed being covered in the morning with scales shed during the night. On examining them with the microscope, no pus-globules could be discovered. The case progressed rapidly, the eruption disappearing from circular portions, leaving annular patches, with all the characteristics of psoriasis. In three weeks there were only a few irregular patches scattered about the arms, back of the neck, waist, and feet. As the eruption disappeared, the skin resumed its former healthy appearance at once, without any of the thickening and soft waxy look so marked in the decline of eczema. This distinction, with the annular character of the eruption, its healing from the centre, and the absence of moisture and of pus-globules, combined with the history of the case, seem decisive of its being an acute psoriasis.

The man became an out-patient at the end of three weeks, and when last seen, on the 20th of August, the skin was found perfectly clear, except on the chest, where were several well-marked circular patches of genuine chronic psoriasis.

CASE 2. *Non-syphilitic psoriasis plantaris.*—This case is worthy of record, because it is one in which there was no suspicion of syphilitic taint or hereditary tendency; and also from the age of the patient, plantar psoriasis being of rare occurrence, except as one of the results of congenital syphilis in infants, or as a form of tertiary syphilis in adults. The patient was a girl of thirteen, of most respectable parents, and living in the country. The mother had three other children, all living, free from skin disease, and perfectly healthy. No affection of the kind was known to have existed in any of the family on either the father's or the mother's side. Eighteen months before coming to the hospital, in March, 1868, the girl noticed that her feet were hot and sore, which she attributed to chilblains. She described them as having been red, and having "dry bladders" on them, the skin peeling off; and that subsequently they were covered with white scales. They had been tender, cracked, and dry ever since. There had never been any exudation from the surface, nor any eruption on any other part of the body. She complained that the feet burned and ached very much, especially after walking, and at times itched severely. When seen, the soles of the feet and the sides for an inch above were of a uniform red. The margin of redness was a well-defined line along the sides of the feet, the height of a low slipper, extending in front to a little above the base of the toes. The plantar surface was cracked and fissured transversely, sparsely covered with white scales, and perfectly dry. There was much less thickening of the cuticle than in ordinary cases of the disease. The palms of the hands and rest of the body were entirely free. Under arsenic, and an ointment of the nitric oxide of mercury and creasote, the feet gradually regained their natural condition. At the end of seven weeks the fissures had gone, and only a few scales and a faint red blush remained. The itching had entirely ceased, and the only inconvenience felt by the patient was a slight amount of aching and burning of the soles after walking. In the course of another month she was discharged perfectly well.

CASE 3. *Syphilitic psoriasis; impetigo of face; occurrence of nodes during treatment by iodide of potassium.*—J. P——, a healthy-looking young fellow, aged twenty-two, became an out-patient in March last. He had general psoriasis; the patches were irregular and ill-defined, brownish in color, somewhat tubercular, and the scales were small and scanty. He had had primary syphilis twelve months before. He was ordered five grains of iodide of potassium in infusion of quassia three times a day, and pitch ointment to the skin. At the end of a week the dose of iodide of potassium was increased to eight grains, which the patient continued to take for three weeks, by which time the psoriasis had almost entirely disappeared, but this was succeeded by some impetigo of the chin and lower part of the cheeks. The ointment was changed to a mild mercurial, and the iodide of potassium continued as before.

By the 30th April, seven weeks after he came under treatment, he was free from the skin disease; but a soft node, some two inches in length, appeared on the right shin. It was very tender, and had been so painful as to prevent sleep. The iodide of potassium was increased to ten grains, but the man did not attend the hospital again for a considerable time. When again seen, several weeks afterwards, he stated that the node had disappeared in a week or ten days, during which time he had continued to take the medicine.

The occurrence of nodes after an uninterrupted course, for seven weeks, of a drug which is sup posed to be a specific in that form of syphilis, is an interesting fact in therapeutics.

GUY'S HOSPITAL.

PNEUMONIA; BLEEDING; RAPID RECOVERY.

(Under the care of Dr. Wilks.)

We quote the following case because of the remarks upon bloodletting which were made by Dr. Wilks, and which will doubtless be read with interest at the present time, when discussion upon the utility or disadvantage of the practice is again being revived.

Louisa B——, aged eighteen, a servant-girl, small but robust, was admitted Sept 23rd. Two days before she became rather suddenly ill, and after a few hours was worse, with a pain in the right side. On admission she evidently had pneumonia; the skin was very hot, the face flushed, and there was a catch in the side on breathing. On examination, there was dulness at the lower part, with bronchophony and a slight pleuritic rub; rusty expectoration. Dr. Wilks remarked that the case was not very severe, and he was unable to tell whether the inflammation would advance or would stay at its present site; he therefore merely ordered some saline and Dover's powder. On the following day she was worse, and towards evening was excessively ill; the fever was very high, and there was great oppression of breathing; crepitation was heard all over the remainder of the right lung, and there was some suspicion of the left lung having been also attacked. Mr. Reginald Stocker having informed Dr. Wilks of her condition, the latter ordered her to be bled, and to have calomel, antimony, and opium pill every four hours. This was accordingly done, and with very marked and quick relief to her oppressed breathing. On the following day she was much more comfortable; bronchophony now heard at top of lung; the left quite free. On Sept. 26th the febrile symptoms were subsiding; physical signs of consolidation of lung pretty perfect. On the 28th, much better; fever departing; sputa bronchial: to omit the pills. In a day or two she left her bed, rapidly convalesced and quitted the hospital quite well on Oct. 14th.

Dr. Wilks remarked that his opportunities were small for treating pneumonia at the onset of the attack, and therefore he was generally obliged to do little more than watch a case in its progress; he had not, however, given up the idea of being able to arrest it by remedies. He stated that he had seen a great deal of pneumonia in private practice during the last summer—in fact, more cases than during the whole of the two preceding years; and what had struck him as most remarkable was the circumstance that nearly all were alike. Thus in all but two the right lung was the organ affected, the inflammation commencing below and progressing upwards; and in nearly all there was a total absence of expectoration. In nearly every case stimulants were given. All but three recovered. One very bad case, that of a lady aged sixty, did well without the use of stimulants. Dr. Wilks could not draw any important inference from the treatment adopted. He believed the majority of cases would have done well on any method; that one or two were benefited by stimulants, and that more than one case was aggravated by their use. If it be true, and no doubt it is, that the tendency is towards recovery if no medicine be given, the question should be, not whether a case does well with bleeding or with brandy, but whether the abstraction of a pint of blood, or the administration of a few ounces of alcohol daily, is sufficient to kill the patient.

As regards bloodletting, Dr. Wilks said he had no data on which he could found an opinion as to its value in pneumonia or other diseases, as an antiphlogistic—that is, as to its power in arresting the inflammatory processes; but he had no doubt as to its good effects in relieving congestion of the lungs under any circumstances. He believed therefore, firmly, that he had seen venesection save life in pneumonia, bronchitis, heart disease, apoplexy, or epilepsy. In pre-auscultatory times it might be that the doctor was apt to style many chest affections pneumonia; but when he was called to a patient sitting up in a chair, livid in the face, panting for breath, and he took out his lancet, and whilst he was bleeding *pleno rivo* he saw tranquility restored, he could not be mistaken as to the good effects of his remedy. Thus it was in the case above reported: immediate relief was obtained, and it may be as Mr. Stocker thought, an arrest to the further progress of the inflammation.

As regards the other old-fashioned remedies for pneumonia, Dr. Wilks stated that he had no doubt opium could arrest inflammation, as the fact could be observed on the outward parts of the body; and he thought there was good reason for believing that antimony had the same tendency. As regards calomel, he considered it a valuable remedy in many morbid conditions, but was not aware of any facts to prove that it had any power of arresting inflammation. Blisters he had long ago given up using in pneumonia. He was not at all inclined to despair of other remedies of the opium class, which might arrest inflammatory action; and as aconite had long had the character of possessing this property, he had been using it whenever an early stage of acute disease came under his notice. Thus he had had a case of pneumonia, and two or three of rheumatic fever, where the symptoms rapidly abated during its use. Why he believed the remedy was efficacious was, that a most remarkable lowering of the pulse took place after the administration of a few doses.

ST. THOMAS'S HOSPITAL.

COMPOUND FRACTURE OF THE SKULL, WITH DEPRESSION; ERYSIPELAS; RECOVERY.

(Under the care of Mr. Sydney Jones.)

The following is an interesting case of recovery from very severe injury. The notes of the temperature are particularly worthy of observation.

Edward W——, aged twenty-nine, railway porter, of reputed temperate habits, was admitted October 2nd, 1867. Whilst endeavoring to avoid an approaching train he had been knocked down by an engine passing in an opposite direction. He was admitted about an hour after the accident, and was stated to have suffered from concussion and to have lost a good deal of blood, some of which he had vomited. Upon examination there was found above the left frontal eminence a crescent-shaped wound, about two inches and a half in transverse measurement, at the bottom of which a fracture could be readily detected, passing at first transversely inwards, and then descending vertically, an angular portion of the frontal, below the left eminence, being depressed for about a couple of lines below the general level of the bone. There was also laceration of the left ear, from which there was much hæmorrhage; but there was no bleeding from the meatus. There was also contusion over the left malar bone, and both upper eyelids were much swollen. There was, however, no sub-conjunctival ecchymosis.

When admitted at 11 A.M. he was quite conscious. He complained of headache; the pupils were equal and contracted normally; pulse 120. The head was shaved, and an ice-bag applied. One hour afterwards he vomited about two ounces of blood. Some calomel and compound senna mixture, after being retained for a short period, were ejected, mixed with a small quantity of blood. Later in the day beef-tea and ice were retained. Was able to pass urine freely; no paralysis. Soup diet.

Oct. 3rd.—Has slept a little during the night, but complains of severe pain in the head. The eyelids are much swollen and quite closed. There having been no relief of the bowels, two ounces of compound senna mixture were ordered, and produced one free evacuation at 4 P.M., and a second, less copious at ten P.M.

4th.—Slept better during the night. Tongue moist and tolerably clean; pulse 108; eyelids less swollen, but much discolored. Was able to eat some rice pudding for his dinner, and seemed to enjoy it.

5th.—Has great pain and tenderness behind the left ear; the ear is also much swollen. Has less pain in the head. Temperature 99·6°; pulse 110; tongue furred. Compound senna mixture, two ounces.

6th.—Pain behind the ear less, but redness more extended. Bowels not relieved. Temperature 103·4°; pulse 108. Blue pill and colocynth.

8th.—Redness behind the ear not increased. Has vomited, and had inclination to retch. Bowels sluggish. Temperature 105°; pulse 116. Two ounces of senna mixture.

9th.—Has had a bad night in consequence of pain on the right side of the neck; this is red, swollen, and very tender. Bowels well relieved last night and again this morning. Temperature 103·8°; pulse 120. Solution of acetate of ammonia, two drachms every four hours. Beef-tea and nourishing unstimulating diet ordered.

11th.—Erysipelas of head and neck; the latter much swollen. There is considerable discharge from the wounds of the forehead and ear. He complains of but little pain. Towards night he is delirious. Temperature 101·6°; pulse 120. Ordered an enema.

12th.—Was very delirious and raving during the night, but is much calmer this morning. In the night twenty minims of solution of morphia were subcutaneously injected, and with great benefit. Temperature 100°; pulse 112.

14th.—Better. Temperature 99°; pulse 112.

15th.—Wound of forehead discharging freely. A small collection of pus being discovered over the left malar bone. Mr Sidney Jones evacuated it. Ice-bag still continued to head; fomentations to neck. Face and neck much less swollen. Appetite better. Temperature 99·4°; pulse 100. Bowels not relieved since the 11th. Ordered colocynth and calomel, ten grains.

19th.—Mr. Sidney Jones incised the scalp in the occipital region and evacuated about two drachms of pus. Discontinue ice-bag. Repeat pill.

21st.—Has now no delirium; frontal wound discharging freely; erysipelas nearly gone; appetite improving.

22nd.—Wound towards occiput discharges a little; that of frontal is healing over. Fish, eggs.

25th.—Takes his food well; sleeps well; the wounds look healthy. Slice.

30th.—Wound of forehead gradually diminishing, but bare bone to be felt at bottom.

Nov. 6th.—Allowed to sit up during a portion of the day.

From this time he gradually progressed. On the 4th of December a thin shell of bone was removed from the frontal wound, which then soon closed, and he was discharged well on the 7th of December.

UNIVERSITY COLLEGE HOSPITAL.

(MATERNITY DEPARTMENT.)

A CASE OF CONTRACTED PELVIS WITH HEAD AND FOOT PRESENTATION; TURNING AND CRANIOTOMY.

(Under the care of Dr. Graily Hewitt.)

The following interesting case is of recent occurrence. For the report of it we are indebted to Mr. Frederick White.

The patient, Mrs. B——, aged thirty-three, is small in statue, thin, and not a strong woman. Has had two children previously. The first was born dead on Oct. 4th, 1865, after she had been four days in labour. No instruments were used. There has been considerable laceration of the perineum, which probably took place in the first labour. The second child was born July 18th, 1867; the labour had lasted three days and it appears that craniotomy was performed.

Mr. White was sent for at 1.15 A.M. on Oct. 6th, and on examination found the os uteri dilated to the size of a shilling, the patient having been in labour since 7 P.M. of the previous evening. At 3 A.M. the membranes ruptured spontaneously, the os uteri not being fully dilated. Previously to the rupture of the membranes Mr. White was unable to make out the presentation, but he then found that the head was presenting in the first position on the left side, and both feet were down on the right side, the right foot being lower than the left.

Mr. White at once sought the assistance of Mr. Mason and Mr. Hodgson, the obstetric assistant, who arrived at 4 A.M. Mr. Hodgson tried to reduce the feet; but was unable to do so, for the moment they were pushed back they immediately returned to their original position. He then decided to turn, and brought down the feet and body of the child in the abdomino-anterior position. There was then very considerable difficulty in bringing down the arms. The left arm was placed right across the back of the head, and the right was stretched out above the head. The left was brought down first, the right soon following. An attempt was then made to rotate the body; but when slight rotation had been effected, the head became fixed in the brim of the pelvis, the face looking towards the left sacro-iliac synchondrosis. Traction was employed for some time without any effect; and then the long, straight forceps were used. Mr. Hodgson succeeded in getting one blade on; but failed in attempting to apply the second. Dr. Graily Hewitt was then sent for, who, on finding the head fixed in the brim, decided upon perforating the head. The child had been dead for some time. The head was perforated just behind the mastoid process on the left side. There was some difficulty in doing so, from the thickening of the bones. At 7.30 the child was born. A considerable gush of blood followed along with the placenta, as the placenta had probably been separated for some time before delivery. Subsequently some difficulty was experienced in getting the uterus to contract, and three-drachm doses of the tincture of ergot were given; but, as the uterus did not very firmly contract, some powdered ergot was given also. Cold was applied to the abdomen, and pressure used from the first. At 8.30 A.M. all hæmorrhage had ceased, the uterus was contracted, and the patient was left. During the whole of the latter part of the labour brandy and laudanum were freely administered. On the 8th of October the patient was doing well. A fortnight after the labour the patient was well enough to resume her household duties.

In reference to the above interesting case, Dr. Graily Hewitt observed that the pelvis was contracted, probably by as much as one inch, in the conjugate diameter; and that in a future occasion it would be proper to induce labour at eight months. The shape of the brim was such—wide at the sides, and contracted in the middle—that it allowed, and doubtless was the cause of, the unusual presentation—viz., that of the head on one side, and the feet on the other. Another point illustrated by this case was this: In cases of pelvic contraction the uterus was often too large just after the labour, even when properly contracted, to descend into the pelvis; and it was hence sometimes eroneously supposed that it was inefficiently contracted. In the course of twenty-four hours, however, the size so diminished that—unless the pelvic deformity be excessive—this organ resumes its proper position, and is no longer so obvious to the touch in the hypogastric region.

ST. GEORGE'S HOSPITAL.

ANGINA PECTORIS, DEPENDING UPON OCCLUSION OF THE MOUTHS OF THE CORONARY VESSELS.

(Under the care of Dr. Wadham.)

In the seventeenth volume of the Pathological Transactions, Dr. Dickinson has recorded three cases of angina pectoris, depending, as he believes, upon blocking-up of the orifices of the coronary arteries by "soft" atheroma. The following case is in so much accordance with the views there set forth, that it seems worthy of being placed on record, as an appendix to those cases. We are indebted for the notes to Mr. T. P. Pick, pathological registrar.

Samuel B——, aged sixty-four, was brought into St. George's Hospital dead. The history that was obtained was, that he was in the park in company with a young woman, when he suddenly complained of dyspnœa and tightness about the throat, and that he then staggered and fell. The only previous history that could be obtained was, that he was subject to similar attacks, and was known to have heart disease.

On post-mortem examination, the body was found to be that of a well nourished man. There was no rigor mortis; and there was no mark or abrasion on any part of the body. The glans penis was covered with spermatozoa, and from this fact it was surmised that he had died during the act of sexual intercourse, the excitement having produced a paroxysm of the disease from which he suffered. The brain was congested, and the puncta vasculosa were increased in number; the sinuses also, and the veins of the corpus striatum and choroid plexuses, were full of blood. There was a slight excess of fluid in the subarachnoidean space. The lungs were slightly congested, but otherwise quite natural. The heart was of large size, weighing fifteen ounces, and was covered with a very considerable layer of fat. Both ventricles were in a state of semi-contraction, and contained a little fluid blood. The structure was rather soft and fatty, and of a paler color than natural. Under the microscope, an increased amount of fat-globules were seen, but the muscular striæ were well marked. The valves were blood stained. The arch of the aorta was covered over by large patches of "soft" atheroma, situated beneath the lining membrane. One of these patches was immediately above the left coronary artery, the orifice of which it overlapped and had contracted so much that it was not possible to introduce a fine probe. The orifice of the right artery was also very considerably contracted from the same cause, though not to the same extent. The coronary vessels themselves were quite natural, with the exception of one or two slight specks of atheroma. All the other organs were natural, except that the kidneys were in a very early stage of granular degeneration.

NATIONAL HOSPITAL FOR THE EPILEPTIC AND PARALYSED.

SYPHILITIC DISEASE OF THE BRAIN; OPTIC NEURITIS; CONVULSIONS BEGINNING UNILATERALLY.

(Under the care of Dr. Hughlings Jackson.)

The following case is one of a class of cases of disease of the nervous system which is, Dr. Hughlings Jackson thinks, the most important of all. We can give but an outline of the history of the main features.

A man, aged twenty-four, was admitted in January, 1868, for convulsive seizures, each of which began in the left hand. After each severe fit he was weak of the left side. His sight was apparently good; but his field of vision was not tested.

Nevertheless, he had double optic neuritis (descending). His eyes were examined by several good ophthalmoscopists (Carter of Stroud, Soelberg Wells, and Clifford Allbutt of Leeds). The patient had also severe pain in the head. Now, the disorder of the unilateral muscular region and the "epileptic hemiplegia" showed plainly, Dr. Hughlings Jackson believed, that there were pathological changes in the corresponding cerebral hemisphere. The pain in the head and the optic neuritis showed that the local internal disease was "coarse," and the subsequent cropping up of a node on the right side of the head declared that the "coarse" disease was syphilitic. The fits continued at irregular intervals, and, besides, the muscles of the affected arm were the seat of a great variety of abnormal movements. It is important to observe that, after one severe fit, the right third nerve was palsied. The patient's sight failed a few weeks before his death (Aug. 29th); and on the 8th of August they presented the appearance of the "swollen" disc. As was easily inferrible during the patient's life, there was found at the autopsy a syphilitic mass, or rather a cluster of syphilitic nodules, growing from the dura mater, and seemingly pressing the pia mater before it into the right cerebral hemisphere. Iodide of potassium was given in large doses—ten and twenty grains; but did little good. The bromide was also given.

◆

LONDON HOSPITAL.

INTRA-OSSEOUS ABSCESS; TREPHINING.

(Under the care of Mr. Maunder.)

A lad about fifteen years of age had experienced a more or less constant pain in the upper part of the tibia for three months before admission, the pain being aggravated at night. There was no history of injury, and the youth had not been seriously ill for some years past. He had followed his occupation up to the day of admission. The upper third of the tibia was enlarged to the size of the adult bone, the skin over it being red, hot, and painful, more especially just below the tubercle, where the redness was most pronounced. There was no fluctuation. Leeches and poultice, with good diet and wine, were ordered. All the inflammatory symptoms diminished; but in a few days returned. Leeches and ice were now employed with a similar effect; but the symptoms again returned. Mr. Maunder suspected abscess in the bone; and the trephine discovered one in the centre of the tibia, beneath the red spot on the skin. Twenty-four hours subsequent to operation, the painful sensations subsided. When we saw him on Wednesday last, the wound was healing rapidly under a dressing of chalk with carbolic-acid oil, and the patient was quite free from any pain.

Provincial Hospital Reports.

SHEFFIELD HOSPITAL FOR WOMEN.

FOUR CASES OF OVARIOTOMY.

(Under the care of Dr. Edward Jackson.)

Case 1.—E. C——, aged thirty, married; had no family; catamenia regular; enjoyed good health until about three months ago, when she began to lose flesh rapidly. First noticed abdominal enlargement five years ago; this was attended with more or less pain. She was admitted into the hospital on October 1st, 1865. On examination, the tumour was pronounced to be ovarian; fluctuation distinct throughout its extent; abdominal circumference, thirty-seven inches and a half; uterus healthy; general health good.

Operation.—October 26th: Chloroform was administered, and an incision three inches in length was made in the linea alba; the cyst was readily exposed, and was tapped. No adhesions existing, it was drawn out, but was found to be attached by a very large pedicle. This required an enlargement of the incision three or four inches upwards, as it was found impossible to apply ligatures with the small incision that was first made. There was no distinct pedicle, but a short broad attachment, extending from the left ovary, over the whole posterior surface of the uterus, to the right ovary. This was tied in three portions, and the ligatures were secured with iron-wire coils, the heads of which protruded from the lower part of the wound, the latter being closed with four wire sutures. A morphia suppository was administered, and she was ordered to take milk, arrowroot, and effervescents and ice if vomiting occurred.

Oct. 27th.—Had a restless night; frequent vomiting; diffused pain over the whole abdomen; pulse 144, very feeble; countenance anxious and sallow. Ordered injections of beef-tea and wine; poultice to abdomen; repeat suppository.

28th.—Pain more severe; pulse weaker, irregular; continued vomiting. She gradually sank, dying forty-four hours after the operation.

Autopsy.—Peritoneum generally injected, and more or less covered with lymph; purulent deposit existing under the liver, and in the pelvic cavity. In this latter situation the parts had a decidedly sloughy appearance.

Remarks.—From information gained subsequently, it was proved that this patient has led a very irregular life, and been addicted to habits of intemperance.

Case 2.—M. F——, aged fifty-five, of spare habit of body; had nine children; catamenia regular up to forty-three years of age; suffered from varicose veins of both legs for twenty-eight years; uterus prolapsed for four years. Has enjoyed moderate health, occasionally suffering from bilious derangements, and slight attacks of enteritis. First noticed abdominal enlargement two years ago, but it has increased more rapidly the last six months; has given rise to little pain or discomfort.

The patient was admitted into the hospital on August 5th, 1866, and her state was as follows: Abdominal circumference, thirty-seven inches; from right ilium to umbilicus, nine inches; left ditto, ten inches; fluctuation distinct throughout; flanks tympanitic; uterus healthy; general health good.

Operation.—August 31st: Chloroform having been administered, an incision four inches in length was made immediately below the umbilicus. The cyst was found to be freely movable, and was tapped. The incision now required extending two inches, in order to extricate a semi-solid mass which was situated near the pedicle. The latter was small, and was readily secured with a single ligature, which was fixed by an iron-wire coil. The wound was brought together with four wire sutures, the head of the coil projecting from the lower part.

Sept. 1st.—Slept badly; been much troubled with flatus and vomiting; has slight pain over the whole abdomen; pulse 90; tongue dry and furred. Ordered a morphia suppository; to take milk, soda water and ice.

2nd.—Vomiting still very troublesome; pulse 100, fuller; abdomen painful, and slightly tympanitic; great thirst. Removed the coil.

3rd.—Vomiting incessant; pulse 110, weaker; abdomen still painful. To have injections of beef-tea and brandy; warm fomentations to abdomen. Mercury and opium ointment to epigastrium. Bowels opened by injection.

4th.—Vomiting still severe; pulse 118, very feeble; less abdominal pain; tongue cleaning. To take a pill with creasote and opium every four hours.

5th.—Vomiting less; tongue much cleaner; pulse 120, slightly improved. Removed sutures, and found the wound almost healed.

7th.—Had a good night; vomiting very slight; pulse 112, stronger; abdomen soft, free from pain; tongue glazed and sore, probably from the ice. To discontinue ice, and take oysters and rice pudding.

10th.—Improving; pulse 104, stronger; bed-sore forming on sacrum. Ordered bark and ammonia; full diet, with wine.

19th.—The improvement had been steady until this morning, when she was suddenly seized with bilious cholera, attended with violent cramps and marked collapse; pulse almost imperceptible; extremities cold; eyes sunk. Ordered sinapisms to epigastrium and abdomen; beef-tea and brandy injections; creasote pill with opium.

20th.—Slightly improved; warmth returning to extremities; vomiting and purging abating; pulse 140, just perceptible; abdomen considerably distended; bed-sore discharging; tongue glazed and aphthous.

21st.—Much better; pulse 108, stronger; abdomen soft. To repeat the bark and ammonia.

From this date she continued to improve, the abdominal wound being perfectly healed, and the bed-sore nearly so. She was discharged from the hospital on Oct. 10th.

The cyst was found, on examination, to be unilocular, with a mass of gelatinous substance, weighing about two pounds, situated near the pedicle. The fluid measured fourteen pints and a half.

CASE 3.—H. H——, aged fifty-five, moderately corpulent; has had six children; enjoyed good health generally until the last six months. First noticed abdominal enlargement twelve months ago, but has suffered little from it, except from the discomfort arising out of the large size of the tumour. She was admitted into the hospital on Sept. 10th, 1867, and her state was as follows:—Abdominal circumference, 61 in.; from right ilium to umbilicus, 17½ in.; from left ditto, 16 in. Uterus healthy; general health good.

Operation.—Sept. 23rd: Having been put under the influence of chloroform, an incision, six inches in length, was made below the umbilicus, the abdominal wall being of unusual thickness. The sac was found to be very firmly adherent to the abdominal wall, and required some degree of force to separate it. The cyst was tapped, and about ten pints of fluid were drawn off. Three other cysts were subsequently tapped, but still the adhesions prevented the extrication of the tumour; the incision was therefore extended three inches above the umbilicus. The adhesions were found to be very firm in the region of the liver; these were carefully torn through, and, no further adhesions being found, the tumour was drawn out. The pedicle was a small one, and was secured with a double silk-cord ligature, and dropped into the cavity; the wound was brought together with six deep and eight superficial sutures the abdominal cavity having been well sponged out, as much fluid had escaped into it during the operation. A morphia suppository was administered; and ice, soda-water, milk, and arrowroot were ordered.

Sept. 24th.—Had a tolerable night. Pulse 93; thirst troublesome; abdomen soft, and free from pain.

25th.—Occasional vomiting during the night. Pulse 100, fuller; flatus troublesome, causing slight pain in abdomen.

26th.—Vomiting diminished; pulse 96; complains of great oppression at epigastrium; tongue furred and rather sore. Discontinue ice, and apply mercury-and-opium ointment to epigastrium.

27th.—Been disturbed with flatus and diarrhœa. Tongue cleaning; very little vomiting; no pain or distension of abdomen. Removed four deep sutures. At 6 P.M. it was found that the wound had opened slightly since removing the sutures, and about three pints of serum, mingled with blood had escaped; but she experienced relief from it. Pulse 112.

28th.—Had a good night; no further discharge from wound; still troubled with diarrhœa; pulse 112. To have chicken, milk and lime-water, and port wine.

30th.—Diarrhœa still troublesome; pulse 112, weaker; tongue red and glazed. Remaining sutures removed.

Oct. 2nd.—Bowels less relaxed; pulse 106; tongue improving; requires catheter to be used, not having been able to pass water for the last three days.

5th.—Improving in every respect; appetite very good.

From this period she continued to improve, and was discharged from the hospital on Oct. 26th, feeling quite well.

The tumour was found to consist of four large cysts, with two semi-solid masses weighing four pounds. The amount of fluid drawn off was forty-eight pints.

CASE 4.—E. N——, aged twenty-seven, a healthy-looking woman, but states that she has lost flesh considerably during the last six months; had no family; catamenia generally regular. First noticed abdominal enlargement two years ago, but it has caused her little pain or discomfort.

When admitted into the hospital December 12th, 1867, her state was as follows:—abdominal circumference, forty-one inches; fluctuation distinct in epigastric and umbilical regions; obscure towards pubes, where there is a distinct projection. Sound only passes about three-fourths of an inch into cervix uteri in an anterior direction.

Operation.—January 2nd, 1868: Chloroform was administered, and an incision five inches in length was made below the umbilicus. The sac was found to be generally adherent to the abdominal wall; the adhesions were separated without much force, and the prominent cyst was tapped; others were subsequently tapped, but still the tumour remained firmly fixed in the cavity. The reason of this was soon explained after the incision had been extended upwards for about three inches: the sac was found to be most intimately adherent to the intestines posteriorly, as well as to the omentum. In fact, the adhesions were so firm that it was difficult to distinguish clearly the line of demarcation. The fingers were employed to separate them, great force being used in several situations where vessels of some magnitude existed; these, however, were torn through, and very little hæmorrhage occurred. The appendix cæci occupied a singular position; it lay firmly bound down by adhesions in a distinct canal formed between two of the cysts. The omentum, being much torn, was tied by a single ligature near the bowel, and the greater part was removed. The sac was still found to be firmly fixed in the pelvic cavity, and strong adhesions were found to exist between it and the left ovary, the whole of the posterior surface of the uterus, and the right ovary. These were separated with considerable difficulty, and the pedicle, arising from the right side, was isolated.

The patient had been upwards of an hour and a half under operation, and showed serious symptoms of sinking, so the pedicle was rapidly secured with a single silk-cord ligature, cut off short, and dropt into the cavity. On examination the left ovary was found to be diseased, forming a solid tumour about four inches in diameter, with a thick pedicle. This was tied with a double ligature, cut off, and dropped in.

The abdominal cavity was well sponged out, and the wound was brought together with six silk sutures. After the operation stimulants were freely administered, and in two hours she rallied slightly. She was ordered milk, beef-tea, arrowroot, and stimulants if necessary. A morphia suppository was administered.—8 P.M.: Feels very comfortable; pulse 145, extremely feeble; no pain; has taken support moderately.

Jan. 3rd.—In the early part of the night she was restless, and had slight abdominal pain; but after a second suppositor was used, she slept, and was much easier.

4th.—No unfavorable symptom; pulse 120, very feeble.

6th.—Still progressing favorably; appetite good; abdomen perfectly comfortable.

8th.—Complains of pain and numbness in the left arm. Removed four sutures; wound quite healthy.

10th.—Feels extremely prostrate; pulse 112, feeble. Has no power to move in bed.

12th.—Bowels were relieved to-day with much difficulty. Removed remaining sutures.

17th.—Gains strength very slowly; but still exhibits no unfavorable symptom. Ordered quinine, full doses of port wine, and a liberal supply of animal food.

From this period she slowly improved, being retarded seriously by a large bed-sore which formed over the sacrum. The abdomen remained perfectly comfortable, the wound healing rapidly. She left the hospital on March 7th, feeling very well, but paid an occasional visit as out-patient on account of the bed-sore.

On examination, the parts removed consisted of an irregularly-shaped sac, forming three large lobes, with numerous smaller cysts,—this representing the diseased right ovary; a solid tumour, with several small cysts in it, representing the left ovary. The greater portion of the omentum was also removed. The fluid drawn off measured twenty-five pints.

Remarks.—There are several points of interest connected with this case which deserve special comment. The adhesions were unusually firm, and involved organs of such importance that the force used might be considered unwarrantable were not the result successful. The intestines were subject to much rough usage, and exposed for a great length of time. Both ovaries were diseased, and were removed, as well as the greater part of the omentum. These facts should give encouragement in cases such as the above, especially where the case is considered non-malignant, and where the subject is a healthy woman. In Dr. Jackson's opinion, so long as the peritoneum is not lacerated, considerable force may be used in separating adhesions wherever they may exist. It may be interesting to state that the subsequent catamenial periods exhibited the following symptoms: at the first there was slight bleeding from the nose; but at the second no symptom whatever beyond pain over the sacrum.

NORTH STAFFORDSHIRE INFIRMARY.

SURGICAL CASES.

(Under the care of Mr. W. H. Folker.)

The notes of the following cases were supplied by Mr. J. M. Taylor, house-surgeon.

Albert H——, aged sixteen, joiner, was admitted into the above infirmary on August 29th, 1867, on account of a tumour existing in the substance of upper lip. The swelling was on the left of the median line, corresponding to the left central incisor tooth, and seemed to be formed of hypertrophied lip. It caused a good deal of deformity as the patient was unable to accurately close his lips. The tumour felt hard, but was not painful. On carefully examining the swelling, a small aperture was perceived at its base, and on passing a fine probe a hard substance was felt, which was diagnosed to be a tooth.

Aug. 31st.—An incision having been made through the tumour, a tooth was found at its base. On attempting to extract it by the forceps, it was fractured; this proved to be owing to its peculiar shape, being of a crescentic form, and passing almost at right angles to the alveolus. After its removal the swelling disappeared, and the patient was discharged on the following day

On the same day Mr. Folker performed lateral lithotomy on a boy of five years, who had suffered from symptoms of stone for twelve months. The operator, after having passed a grooved staff into the bladder, pushed the point of a lithotomy knife into the perineum, half an inch above the anus, and, its point impinging on the staff, by one incision made an opening into the bladder. On passing the index-finger of the left hand through the wound, and introducing the forceps, the calculus was quickly extracted. It was the size of a large bean, and quite smooth.

The patient continued to progress favorably up to the fifth day, when the urine, which until then had passed altogether by the wound, came for the first time in small quantity by the urethra, as well as by the incision.

6th day.—Passed more urine per urethram.

10th day.—Passed more by urethra than by wound.

14th day.—Passed all by urethra; wound closed, except at external orifice.

Discharged on Sept. 23rd (24th day), quite well.

Since the above case, Mr. Folker performed lateral lithotomy (Nov. 2nd, 1867) in the same manner using only one incision.

The patient was a boy, aged four years. This case was remarkable from the fact of the urine passing by the urethra immediately after the operation, and on the third day all the urine passed by the urethra, so that primary union must have taken place in the internal incision.

Discharged on November 18th, quite recovered.

* * *

Clinical Records
OF
THE PARIS HOSPITALS.

HOPITAL DES ENFANTS MALADES.

CASE OF TUBERCULAR MENINGITIS, ILLUSTRATING THE ORDINARY COURSE OF THE DISEASE—CASE OF TYPHOID FEVER SIMULATING TUBERCULAR MENINGITIS.

(Under the care of Dr. H. Roger.)

Dr West, in his admirable "Lectures on the Diseases of Childhood," remarks that it is sometimes a matter of great difficulty to distinguish between acute hydrocephalus and remittent fever. Guersant, the celebrated "children's doctor," used frequently to express the same opinion in his wards at the Hôpital des Enfants Malades of Paris. And, indeed, cases of acute hydrocephalus, particularly at the outset of the malady, may well be mistaken for typhoid fever; whilst the reverse is of still more frequent occurrence, and serves to explain why the number of so-called tubercular meningitis which are on record is far greater than is justified by our experience of this formidable disease. The second of the two following cases, which occurred simultaneously in M. Roger's wards, is a good illustration of the difficulties that may be experienced in diagnosticating between the two affections. It is not uninteresting to place the details of the first case, which was unmistakably one of acute hydrocephalus, beside the second. It may be taken as an excellent instance of the ordinary course and habitual lesions of the malady, and may thus serve as a term of comparison. In Case 1 an error of diagnosis could scarcely have been possible; while in Case 2 the tender age of the child, the constipated condition of the bowels, the intense cephalalgia, the persistence of vomiting, the nature of the child's cry, and the general appearance of the patient, at once suggested the idea of tubercular meningitis. Once under this impression, it was natural to underrate the absence of the more striking points of the latter affection, and to overrate those which were present; so that there was some surprise, on examining the body after death, at discovering that the lesions were those of typhoid fever, and not of the other malady.

Case 1. *Tubercular meningitis.*—Hippolyte M——, aged two years, entered the Salle St. Louis on May 4th. He had there been ill for fifteen days, and had had constant and almost irrepressible vomiting the preceding eight days. There had also been much constipation of the bowels. At the time of admission the child was in a state of great prostration and had much fever; pulse 140.

May 6th.—The abdomen was neither shrunken nor distended. Large mucous râles were heard in both lungs. Ordered—calomel, ten centigrammes; scammony, forty centigrammes.

8th.—Pulse 152; respiration 64. Since the day before the child has had convulsions. The limbs are stiff; the movements are performed with greater difficulty on the right side of the body; sensibility is more obtuse. The child does not cry when the skin is pinched on either side of the body, but reflex movements are observed. The pupils are dilated, but of equal size; stabismus is present. The meningitic macula is deeply marked. There are now scarcely any râles in the chest.

9th.—Convulsions had continued unceasingly until this morning. When seen during the morning visit, the upper extremities were in a relaxed state, and the lower ones stiff and contracted; strabismus existed, as also trismus; the pupils were much contracted; there was complete anæsthesia; the sight and hearing was quite abolished; the body was in a state of perfect immobility, and showed a contrast with the movements of the base of the thorax (painful abdominal respiration) and with the beatings of the alæ nasi; the pulse was very small, could scarcely be felt, and numbered 200.

10th.—Died at 10 A.M.

Autopsy.—Cerebrum: The convolutions were flattened, and of an opaline and pallid appearance; the ventricles distended by a large quantity of fluid (about 100 grammes), and their walls extremely softened. Along the fissure of Sylvius, were discovered grey granules. In the inter-peduncular space and upon the chiasma was a deposit of yellow gelatinous lymph. The inferior surface of the cerebellum showed a pale and milky aspect. Fine granulations, without any peripheric vascularity, were seen to exist in the wall of the posterior sub-arachnoid space.—Lungs: Fine semi-transparent granulations were observed under the pleura. There was apoplectic congestion of the posterior border of the two lungs. The bronchial glands were tubercular.

Case 2. *Typhoid fever.*—Alexandrine P——, aged, twenty-three months, admitted into the wards on May 5th. On the 1st May the child had been taken with fever, sickness, and anorexia. She carried her hand to her head when her mother asked her where she felt pain. The bowels were constipated. On the 2nd she had convulsions, and on several occasions uttered loud cries. A remedy was ordered for the constipated condition, and a white powder (probably calomel) was administered. The purgative was followed by diarrhœa with stools of a green color. Until the day she was received into the hospital the convulsions and shrill screams of the child recurred on several occasions.

On the 6th May, when seen for the first time by M. Roger, the following condition was observed: Countenance anxious; stupor more apparent than real; the child follows a watch with its eyes, but does not seem to hear when spoken to. The pupils are dilated, but of equal size. The abdomen is distended. The lower limbs seem somewhat rigid. The pulse is small, 140. Thirst is intense. The meningitic macula is easily raised, marks well, and lasts for a long time.

The question of tubercular meningitis was then agitated, on account mostly, of the initial symptoms and of the age of the child: the râles heard in the lungs were referred to pulmonary congestion accompanying the presence of tubercles, and accounting for the intense thirst seldom observed in tubercular meningitis. Ordered a blister to be applied to the shaven head, and mustard poultices to the legs; a julep, with one gramme of bromide of potassium.

May 7th.—The child has vomited her potion, but not her other drinks. Diarrhœa continues. She has not had convulsions, but frequently uttered loud cries. Pulse 160, regular. The belly not shrunken. The meningitic macula still easily produced. Sensibility preserved. On slightly pinching the skin, trembling of the limbs takes place. The limbs are not in a relaxed state. The pupils are natural; there is no strabismus; the sight is preserved. On auscultation, subcrepitant râles are heard on both sides of the chest. The breathing is difficult, and attended by beatings of the alæ nasi. Deglutition takes place painfully.

8th.—The eye is dim; but there is no strabismus. The child is in a drowsy condition. Sensibility is much impaired. Convulsions have not recurred. Fine subcrepitant râles are heard in both lungs, but especially in the lower portion of the left lung. Ordered tincture of iodine to be painted over the chest. A julep, with four grammes of the alcoholate of aconite. Death occurred on the same day, being the eighth after the first appearance of the disease.

Autopsy.—Encephalon: There was some congestion of the pia mater; but in no situation was there to be observed the slightest trace of granulations or lymph, nor the opaline aspect of the investing membrane. The grey substance of the brain was of a pinkish hue. The white substance was not spotted with blood. The ventricles were not distended; their parietes, as well as the whole cerebral mass, were of a normal consistence. There existed no tubercle in the cerebrum or cerebellum. The spinal cord was healthy, free from congestion, and of a proper consistence. The investing membranes were not congested; but there was marked vascularity of the cellular tissue which separates the dura mater from the vertebræ.—Lungs: Congested, but crepitated well at their base and behind; very emphysematous at the apex and in front. Bronchial glands softened, and of a purple color.—Intestines: The small intestine showed slight arborescent congestion in several situations. Peyer's glands had undergone tumefaction, and were of a deeper color than the rest of the mucous membrane. This latter character was observed especially in the neighborhood of the ileo-cæcal valve, the folds of which were of an intense red color. The mesenteric glands were enlarged, softened, and of a deep red color. The spleen was tumefied, gorged, and in a friable condition. The fibres of the abdominal muscle were not granular or otherwise altered.

Remarks.—This case is a good instance of the difficulties which may be encountered in diagnosing between acute hydrocephalus and typhoid fever—a point of much importance, on account especially of the treatment and prognosis. The drowsiness, sickness, and fever, which mark the onset of the former disease, may be mistaken for the incipient stage of typhoid fever, and the error may be prolonged till the occurrence of strabismus, which is a very valuable indication. Yet this symptom may be absent and it may be overlooked or underrated when considered beside the other symptoms; and so it sometimes happens that the case continues to be taken for one of adynamic fever: or the mind wavers from one point to another; treatment is employed with diffidence, and with less precision and energy than would be required, until the formidable cerebral symptoms of the close of acute hydrocephalus correct the diagnosis when it is unfortunately too late. It more frequently happens, however, that the error is committed in the opposite case; or, in other words, that it is typhoid fever which is more ordinarily mistaken for acute hydrocephalus. The above case is a good illustration of this fact. The symptoms which ushered in the disease—the fever, sickness, and dislike for food or drink—could be referred to either malady. But the repeated vomiting, the intense headache, the obstinate constipation, the hydrencephalic streams which attended and followed, were well marked indications of acute hydrocephalus. And not only the general appearance, but each symptom considered separately, pointed to this diagnosis. Thus the cephalalgia was far more intense than generally occurs in cases of typhoid fever. In acute hydrocephalus the headache is persistant and intense; the child carries its hand to its head, and complains loudly and spontaneously of the pain which he experiences in that situation. In typhoid fever the pain is slight, and the patient, when questioned, does not make much complaint about it. Next, the repeated vomiting pointed to a cerebral disease, and that disease most probably acute hydrocephalus. The child did not vomit once or twice, as is usually observed at the onset of febrile diseases in children; vomiting recurred repeatedly during two or three days, as in cases of acute hydrocephalus. The bowels were in a constipated condition, as in that disease; and in order to relieve the intestinal disorder a purgative powder had been administered. The meningitic macula, upon which Trousseau laid great stress, was easily produced, showed intensely, and was very persistent. The result of this case, however, is one more instance of the little importance which is to be attached to this phenomenon as a symptom of cerebral disease; it depends upon the congested state of the skin, and exists in all affections of childhood associated with fever and congestion of the integument. Most frequently the child had uttered the long shrill scream to which Coindet of Geneva gave the name of "hydrencephalic," and which he considered as characteristic of water upon the brain; it may exist independently of this circumstance, as was shown in this case, and better deserves the name of "cerebral cry." The age of the child was a most important circumstance, and pleaded strongly in favor of the hypothesis of acute hydrocephalus. Remittent fever is very rare before five years of age, and is hardly ever met with in children under three; while at least half of all cases of hydrocephalus occur in children who have not completed their fifth year. Other circumstances were, however, of a doubtful nature, or drew the attention towards a different diagnosis. The occurrence of convulsions the very next day after the outbreak of the disease, and the persistence of the symptom, was an unusual circumstance alike in hydrocephalus and in remittent fever. Notwithstanding the heavy countenance and the relaxed state of the whole body, sensibility was still present. The child's eye followed a watch which was shown, and on the skin being pinched there was some slight trembling of the limbs. The tympanitic abdomen was rather indicative of remittent fever; it is, however, a symptom which may occur in acute hydrocephalus. The abdomen in this disease does not necessarily become shrunken until involved in the general emaciation. The beatings of the pulse were more frequent than in the corresponding stage of hydrocephalus. The thirst was intense, and this formed an important indication, as in hydrocephalus there exists an equal dislike for drink and food. The high temperature of the skin and the state of the pulse, indicating excessive calorification, might, however, have accounted for the presence of thirst on the hypothesis of tubercular meningitis. The pupils were much dilated, but there was no strabismus—a circumstance worthy of great attention. The râles heard in both lungs could be explained away by admitting the existence of pulmonary congestion associated with the tubercle. Notwithstanding these circumstances, and by reason of the age of the child, the general appearance and the peculiar symptoms already referred to, the diagnosis was more clearly in favor of acute hydrocephalus. The results of the autopsy showed, however, that there was no organic lesion of the brain, and that the case was unmistakably one of typhoid fever.

LARGE RECURRENT TUMOUR OF THE LOWER JAW; REMOVAL; RAPID RECOVERY.

(Under the care of Dr. GIRALDES.)

R——, aged fourteen, was admitted into the wards in June last. She is a strong, well-built girl, and enjoys habitual good health.

History and description of the tumour.—About the end of February last the patient became aware of the presence of a tumour situated in the floor of the mouth beneath the tip of the tongue and behind the dental arcade. The tumour was then of the size of a nut. By the month of April following the morbid growth had much increased in size, and had become very prominent in the mouth; a large portion of it was therefore excised by a medical man. At the time of the patients admission into the hospital the tumour was the size of a small apple, and bulged under the tongue. In that situation it presented an ulcerated but not a bleeding surface, which did not communicate any offensive odor to the breath. The bulging of the tumour could be felt with the finger in the subhyoid region, but did not cause any marked visible deformity. The tumour was immovable, and seemed to adhere to the posterior, surface of the body of the lower jaw-bone. On exploring the anterior surface of the bone, it was found to be in a normal condition. The anterior surface of the dental arcade also presented a normal appearance. Immediately behind the teeth could be felt the bulging of the tumour. The lower border of the body of the inferior maxillary was somewhat thickened on the left up to the situation of the ascending ramus; on the right the thickening extended somewhat further. The growth was of hard and elastic consistence.

By July 30th, at which date the operation was performed, the tumour had rapidly increased to double it size since the time of the patients admission; but it was particularly the vertical diameter which had augmented. The bulging in the mouth was much more considerable, and the growth now produced a notable deformity of the sub-hyoid region. In front of the central portion of the lower jaw-bone slight bulging had become manifest. The general condition of the patient was still excellent. There was no tumefaction of the ganglia.

Operation.—M. Giraldès resected the body of the sub-maxillary bone with a portion of its left ascending branch, and removed the tumour, which was well circumscribed and implanted in the bone. A vertical incision was first made, commencing at three centimetres beneath the lower lip, and extending to the middle of the subhyoid region. Two lateral incisions were then made, the left extending to the ascending ramus, the right extending to two centimetres within the ascending ramus. Ligature of the facial artery, which was extremely small, was performed. The flaps having been carefully dissected, the resection of the bone was made at about the middle of the ascending ramus on the left side, and at the junction of the body of the bone with the ascending ramus on the right side. The flaps were united by means of a metallic suture. There was no difficulty in separating the tumour from the mylo-hyoid muscles.

The local sequelæ of the wound were of a most favorable kind. The after treatment consisted mainly in injecting a solution of carbolic acid into the mouth, so as to remove the large quantity of sanious and purulent matter which accumulated there, and in applying to the wound compresses steeped in camphorated alcohol, or carbolic acid, proper restorative diet being administered to the patient. The recovery was remarkably rapid, and eight days only after the operation the patient was walking about the wards in high spirits and excellent condition.

Examination of the tumour after removal.—The morbid growth had obviously taken rise in the periosteum; osseous, needle-like processes were observed proceeding from the maxillary bone, and penetrating into the tissue of the tumour. The body of the bone was slightly hypertrophied. When cut through, the tumour presented a greyish-white appearance. Its consistence was rather firm, and the tissue did not creak under the scalpel. Examination with the microscope showed that the growth belonged to the now well-defined group of sarcomata. The presence of some cartilaginous and of some osseous elements gave a mixed character to the tumour, of the composition of which some idea may be had by the appellation "osteo-chondro-sarcomo." The sarcomo in the present case belonged to the variety of sarcomata having large fusiform cellules, and did not warrant so gloomy a prognosis as if it had been a medullary sarcoma.

Inoculations with the tumour were performed by M. Joffroy (one of the *internes* of the service) upon two white mice. Two inoculations were made under the skin by means of grafted shreds. In three others, matter scraped from the tumour was introduced into a deep wound in the neck. The results of these various experiments were entirely negative.

The account of this case has been obligingly communicated by M. Joffroy, whose name has been mentioned above.

Medical Societies.

DECEMBER—JANUARY.

MEDICAL SOCIETY OF LONDON.

DR. B. W. RICHARDSON, F.R.S., President.

THE Hon. Secretary read a communication from Mr. W. Naughtin, on

A CASE OF CONCURRENT GANGRENE OF THE TONGUE AND HAND.

A female, aged forty-eight, was attacked with erysipelas of the right arm. She was treated by internal administration of ammonia and bark, with poultices locally; but she became worse, and five days after the commencement of treatment complained of swelling and aching of the tongue. The day following, signs of mortification were apparent in the hand; and five days afterwards a slough, consisting of the upper portion of the tip of the tongue, was removed. The case was treated by sulphate of quina (two grains), tincture of perchloride of iron (twenty-five minims), and dilute hydrochloric acid (twenty minims), in a sufficient quantity of water; administered every two hours. The patient recovered with the loss of the first joint of the forefinger, which was amputated.

Dr. Andrew Clark thought that the tongue symptoms might have been due to embolism occurring after the primary erysipelatous condition of the forearm. He inquired if there was a concurrent history of rheumatism or cardiac mischief, and was answered by the President in the negative.

Dr. Routh advocated free incisions in such erysipelatous condition as was described, and advised much larger doses of the perchloride than were here given. The best local astringent was the solution of persulphate of iron.

Mr. Francis Mason brought forward a boy having an Ulcer upon the Upper Eyelid, which not only presented a "specific" appearance, but coexisted with marked induration of the superficial glands of the neck of the same side. The question was whether it was a primary sore.

Mr. Hunt advised treatment by the administration of iodide of ammonium.

An opinion was expressed that the sore was strumous.

Dr. W. H. Day related two cases illustrating the value of Venesection. The first was a case of concussion of the brain, in which there was persistent coma until the abstraction of thirty ounces of blood, when improvement took place, with subsequent recovery. The other was a case o acute rheumatism with pleuritic complications, relieved by venesection to sixteen ounces.

Dr. Day-Goss said that as regards venesection, much depends upon locality; it certainly does not succeed when typhoid symptoms prevail.

ON A CASE OF HÆMORRHAGIC PHTHISIS, WITH REMARKS.

Dr. Andrew Clark read a paper on the above subject, the joint authors being Mr. Peter Marshall and himself. A butcher of good health, and corpulent, was taken in July, 1864, with symptoms stated to be those of congestion of the lung, accompanied by hæmoptysis. He recovered, and remained well for two years, when his health failed. In 1867 cough and dyspnœa occurred, and in April of that year examination of the chest showed slight flattening of the left side; feeble respiration with prolonged expiration over the apex; between second and fourth ribs circumscribed spots manifesting bronchial respiration and bronchophony with moist râles. The right lung seemed sound. Cardiac dulness was increased; there was no distinct apex-beat, and the second sound was abnormally abrupt. Veins of the neck were turgid; pulse 100, small, unequal, compressible. After a review of the possible causes of the condition, the authors determined it to be a case of hæmorrhagic extravasation. The sputa afterwards became in part gangrenous, and manifested multitudes of blood-discs disintegrated and decolorised. Congestion of the base of the right lung supervened, and afterwards the patient died during violent hæmoptysis. The post-mortem showed fat in the integuments; a soft shapeless heart, so friable that its walls were easily pierced by the forefinger; a dilated atheromatous aorta; in the middle portion of the left lung dense masses, which had a common origin in extravasated blood. The authors presented the various points of differential diagnosis, especially between ordinary phthisis, cancer, and this condition. It is highly important to distinguish between the varied pathological conditions agglomerated under the title phthisis; probably some of the so-called "curable" cases were of this variety.

After some remarks by Mr. Marshall, Dr. Douglas Powell, and Mr. Wolfe,

Dr. Symes Thompson said, that though highly important, it was extremely difficult to differentiate the forms of so-called phthisis.

The President enumerated several of the pathological varieties of phthisis, commencing with that which is the result of the inhalation of foreign matter, passing on to purpuric phthisis, the variety which follows fevers, and then that which he had termed "alcoholic phthisis." The latter is associated with feeble heart, and the deposits in the lungs do not present the degenerated elements observed in ordinary tubercle. In this case the question was—did the hæmorrhagic deposits occur from failure of the heart itself, or from primary fragility of the vessels.

After observations from Mr. Hinton and Mr. Barnes,

Dr. Sansom said the case was one of great interest, but he considered the term "phthisis" misplaced in reference to it: that term by common usage indicated a pulmonary disease. This was at least as much cardiac as pulmonary in its manifestations, and in his opinion it was cardiac as regarded the essence of the disease. The early signs were not those common to phthisis, but those of degenerated heart, with the pulmonary congestion common to that condition; then, from circulatory imperfection, there were localised hæmorrhagic effusions; and, finally, the patient died in a mode unusual in pulmonary phthisis. It would be equally correct to term this a case of "cardiac and arterial degeneration."

Dr. Evans considered this a case of general hæmorrhagic condition manifested chiefly in the lung.

In reply, Dr. Clark defended his use of the word "phthisis," defining the term as "a state of the lungs in which progressive consolidations undergo progressive disintegration."

Mr. Alfred Cooper showed a Calculus, which he had removed from the bladder of a boy aged twelve by the lateral operation of lithotomy. The point of interest was that the boy had been in the West London Hospital for seventeen days without showing a symptom of the presence of the foreign body.

Mr. Cooper also exhibited three Polypi of the Rectum, one of which he had removed from a child, one from a lady, and one from a gentleman. He had used the ligature in all the cases, and all had been mistaken for hæmorrhoids.

Mr. Henry Smith showed a Stone weighing five and a half ounces, which he had removed from a woman's bladder. She had suffered eight or ten years from the disease. He extracted the calculus piecemeal by an incision made through the vagina and the neck of the bladder. The patient had since died.

Mr. Smith also exhibited a Stone from the female bladder, in which case he had performed the usual operation of lithotrity. At the second operation there was some difficulty in introducing the lithotrite, when the cause of the obstruction was discovered to be a large fragment, as big as a small walnut, which had become impacted in the urethra. This was removed by slightly incising the meatus, and the patient did well.

An animated discussion then followed on the question of dilating the urethra, Mr. Walter Coulson and Mr. Bryant being of opinion that rapid dilatation was seldom, if ever, followed by incontinence, whereas slow or gradual dilatation was attended by that distressing sequel.

Mr. Henry Lee then read a paper on

THE MEDIO-LATERAL OPERATION OF LITHOTOMY.

The author described the way in which he now performs lithotomy, and which he has named the Medio-lateral Operation. He gave the particulars of three cases in which this operation had been performed. The first of these had occurred upwards of twelve months ago. The medio-lateral operation, he said, was performed in the following manner:—The patient is placed in the ordinary position for lithotomy, and a grooved staff having been introduced, an incision is then made in the median line of the perineum from before backward. This incision should extend through the posterior half of the perineum, terminating two or three lines in front of the anus. From this point the incision is continued for a quarter of a circle round the front and left side of the rectum. The finger of the left hand may then be put into the wound, and the rectum pressed back, whilst an additional touch or two with the knife separates it still further from the parts in front. The forefinger of the left hand is now passed into the rectum, and the knife with its back towards the bowel, is passed at the posterior part of the central incision, and in the median line, into the membranous portion of the urethra. With the finger as a guide this is done with great ease and certainty. A bistoury or knife, with a probe as its extremity, is then passed into the same opening, and made to slide along the staff into the bladder. The blade of the knife is then directed towards the patient's left side, and somewhat backward, and as it is withdrawn the heel of the knife passes in the direction of the original incision through the skin. The point of the knife remains very nearly in the median line. A free external incision is thus produced, involving no important parts, with a small opening into the bladder. The urethra being opened, the median line is reached with the greatest facility with the finger, and the incision into the bladder is in the same way very easily dilated. The forceps, or any other instruments that may be used, are also introduced more directly into the bladder than in the ordinary lateral operation. In this operation all the usual accidents and difficulties which are likely to occur in lithotomy are guarded against. With the finger in the rectum as a guide, the urethra may be opened without difficulty, and a probe-pointed bistoury, being guided by a grooved staff, cannot well fail to enter the bladder. The incision into the prostate gland is made from within outward, and this he (Mr. Lee) considered an advantage. An incision made in the opposite direction partakes more or less of the nature of a stab, and the point of the knife, even when guided by the most skilful hand, will sometimes wander from the groove in the staff.

The medio-lateral operation for lithotomy is performed in far less time than it requires to describe it, and Mr. Lee had been impressed in operating both upon the dead and living subject with the facility with which it is accomplished. The instruments used are an ordinary staff grooved in the median line, a common narrow scalpel cutting on one side only, and a curved bistoury with a probe projecting two lines beyond the termination of its cutting edge.

In children a single incision with the scalpel is generally sufficient, but in adults the circular part of the wound should be deepened either before or after the urethra is opened. Should the stone prove large, there is no difficulty in obtaining more room at the neck of the bladder by mak ing an incision in the prostate gland on the right side, as well as upon the left This is easily accomplished by the probe-pointed bistoury introduced upon the finger, and guided by it.

The external incision in the medio-lateral operation combines, as it appears to Mr. Lee, the advantages of all the different incisions which have been recommended. It affords sufficient room for the use of instruments. These may be introduced in the median line, and the rectum is not likely to be displaced or injured. The operation as a whole is, he thinks, the simplest in conception, the easiest in execution, and the least liable to be attended or followed by any unfavorable complications, of all the operations for lithotomy.

Mr. Bryant advocated the plan that he had been taught—of using a straight staff. He believed that almost any stone of reasonable size could be removed by the lateral method. Mr. Lee's plan might be useful in very large stones.

Mr. Walter Coulson and Mr. Teevan respectively spoke of the importance of cutting, not dilating the prostate, and exhibited calculi that they had removed.

The President gave a succinct history of the operation of lithotomy, and showed that whatever operations were performed, death is in proportion to the age.

Mr. Charles Hawkins said that the mortality was greater in private than in hospital practice, the reason being that hospital patients applied earlier for relief, and were more ready to undergo the necessary operative procedures. Private patients, on the contrary, hoped on until their kidneys and bladder became diseased.

In reply, Mr. H. Lee thought that his plan of operation was very easy to perform, and he believed that dilatation of the prostate was not only very possible, but expedient.

After a few remarks, from Mr. Gregory Smith and Mr. Mason, the meeting adjourned.

* * *

CLINICAL SOCIETY OF LONDON.

Mr. Paget, Vice-President in the Chair.

ACUTE AND SUBACUTE RHEUMATISM.

Dr. Peacock communicated an analytical summary of 146 cases of acute and subacute rheumatism. Of these cases there were only 84 free from serious cardiac complication; pericarditis was shown to be more common in cases of slighter rheumatism, and endocarditis in those of greater intensity. Pericarditis alone, or with endocarditis, occurred in the course of the attack in 11 per cent. of the cases; endocarditis alone in 25·3 per cent. In by far the greater number of these cases of recent complication the heart affection already existed at the time the patient was admitted. In the cases in which the rheumatism was of short duration at the time of admission, or arose during the course of treatment, the evidences of disease generally wholly disappeared before the patient's discharge.

Dr. Sibson desired to know, in respect of those cases in which Dr. Peacock considered that endocarditis had supervened during the attack of acute rheumatism, what method had been used to ascertain that no valvular disease had existed previously.

Dr. Peacock was well aware of the difficulty to which Dr. Sibson had referred, and was ready to admit that recent endocarditis could not be distinguished from old disease by the physical signs. He knew of no method by which the conclusion could be arrived at in any given case that the heart complication was recent, excepting that of carefully studying its previous history and progress. He had found the difficulty of discriminating between anæmic murmurs and those of organic origin still more serious than that to which Dr. Sibson had adverted.

Dr. Southey asked whether Dr. Peacock had observed differences between different years or periods in the liability of patients suffering from acute rheumatism to disease of the heart. He observed that during the last two or three years acute rheumatism was less frequently complicated with endocarditis than formerly, and that the complication was much more frequent in cases of long duration (e. g., six weeks) than in those of rapid course, in which pericarditis was more common.

Dr. Williams stated that his attention had at a very early period been directed to the question under consideration. He thought that recent valvular disease might be distinguished from old by the variable shifting character of the murmurs. As regards the percentage of cases in which it occurred, much would depend on the mode of investigation, for the physical signs are so transient, that unless observations are made daily throughout the whole progress of the case, they are certain to be overlooked.

Mr. Hulke read an account of a case of

ICHTHYOSIS GLOSSÆ,

where, after nearly twenty years, epithelioma supervened. After considering various points in the history of the case, he favored the idea that the two diseases occurred independently. The final supervention of epithelioma in the only two cases of ichthyosis glossæ which he had met with, and the anatomical parallelism presented by the very active multiplication of cells of an epithelial type in both diseases, were not, however, without significance.

Mr. Paget had examined a similar case some years ago, which ended in epithelial cancer—one of the first cases in which epithelial cancer was described in this country. He doubted if there was a greater tendency in this ichthyosis to run into cancer than in other continued irritations, such as that caused by syphilitic disease of the tongue. Cancer without doubt was provoked by the long-abiding influence of chronic irritation.

Dr. Andrew Clark had met with cases in which glass-blowers became subject to the formation of opaque, leathery sort of membrane, not warty, on the surface of the tongue. In two cases, after the use of irritants cancer supervened. It seemed as though the continued irritation exhausted the local power of development, leaving the growing power to run riot.

Dr. Douglas Powell read a case of

PHTHISIS AND CONTRACTED LUNG,

in which the signs and symptoms closely resembled those of fibroid phthisis, as described by

Dr. A Clark, notwithstanding that history and the post-mortem results showed it to be a case of chronic tubercular disease. Dr. Powell postponed his remarks on treatment until two other cases (for the examination of which a committee was requested) had been considered.

Dr. Wilson Fox, in commenting on Dr. Powell's case, said that chronic pneumonia, the thickening of the alveolar walls which results from the inhalation of irritating substances, and especially tubercle, frequently terminate in fibroid change. With reference to tubercle, he remarked that certain cases had been lately described as "fibroid phthisis," in which distinct granulations were found in the lung. As the result of his own personal observations, he imagined that these granulations were tubercle, and that the grounds for regarding them otherwise were purely arbitrary. The cases in question are so rare, that in the absence of more distinct evidence of their independence of pneumonia or tubercle, we are not justified in erecting them into a separate species. Admitting that there is a certain antecedent improbability that tubercle should attack one lung only, the cases may be fully explained on the hypothesis of a pneumonia, to which many facts in their history point.

A committee, consisting of Dr. Pollock and Dr. Andrew Clark, was appointed to investigate Dr. Powell's cases.

Mr. Callender brought under the notice of the Society a case of Double Amputation, the boy having been under the care of Mr. Brook, of Lincoln. The case was referred to for the purpose of showing how well the patient could walk, with knee and ankle-joint movements provided by Mr. Gillingham's artificial limbs, and to point out the practical difficulties which had resulted from the temporary fixing of the thighs in flexion upon the abdomen.

FIBROID PHTHISIS.

A case of chronic disease of the right lung, with contraction of the right side of the chest, exhibiting the characters of fibroid phthisis, was exhibited by Dr. Julius Pollock, and a report on the same case by Drs. Symes Thompson and Douglas Powell was read. The reporters concluded that although the case resembled those described by Dr. Andrew Clark in respect of its slow progress and more obvious characters, it did not possess such distinctive features as to justify separate classification. This opinion was based on the phthisical aspect and constitutional state of the patient, the existence of physical signs of a cavity at the right apex, and of disease in the opposite lung, and the absence of evidence of fibroid disease in the organs. Dr. Thompson further remarked, that without reference to the question whether or not fibroid phthisis is to be recognised as a distinct species of disease, the case was not a characteristic example of the kind, as designated by Dr. Clark; at the same time stating that he had not in his own experience met with a case which in its whole course of development corresponded to Dr. Clark's definition. Dr. Powell recalled the attention of the Society to the leading features of the case related by him at the last meeting, pointing out some important differences between it and the case now under consideration.

Dr. Wilks thought that no objection could be offered to comprising within the term "phthisis" all cases in which the lungs are progressively disintegrated, just in the same way as Bright's disease is made to include a great variety of morbid conditions of the kidney. Although cases in which fibroid change is associated with the more common post-mortem results of phthisis occurred frequently, it appeared to him that cases in which it existed independently of those lesions were extremely rare. He had met with such cases, and therefore thought it important that they should be recognised, and saw no objection to the term applied to them by Dr. Clark.

The President then called upon Dr. Clark, who, after some complimentary observations, said that he felt bound to justify himself against the charge which had been preferred against him of revolutionary tendencies, and he could not do this better than by giving to the Society once more a summary of his views. By the word phthisis he meant a progressional consolidation of the lung, with subsequent progressional destruction of the consolidated parts. So far all would agree with him. What he maintained in opposition to those whom he termed "thorough-going limitarians," was that this process was not always of the same pathological nature, and that the common notion that it resulted invariably from the deposit in the diseased organ of a foreign body called tubercle, which must work itself out, was a false one. His object was to show that cases of phthisis may be classified into groups, which, although not separated from each other by abrupt lines, are nevertheless tolerably distinct, and that with every such group a characteristic anatomical change is associated. He proceeded to point out, in the same terms as on previous occasions, the distinctions between tubercular pneumonia and hæmorrhagic phthisis; and finally stated the affection to which he desired to apply the term fibroid phthisis to be distinguished by its definite mode of origin, its slow progress, its more febrile character, its affecting one lung only, its producing retraction and displacement of neighboring organs, its affecting organs in, by preference, persons of middle age, and its being associated with similar changes in the skin and internal organs, and even in the nervous tissue. By giving a name, he said, to this affection, all that we do is to label a certain class of cases as forming a recognisable group, and do not necessarily commit ourselves to any theory. Dr. Clark concluded by replying to the objections of previous speakers.

LIGATURE OF THE FEMORAL ARTERY.

Mr. Maunder reported a case of wounded superficial femoral artery, requiring ligature of the vessel. He referred to the fact that dark, venous blood was seen to escape from the distal portion of the vessel, and he stated that this occurred in all such cases if examined before the circulation had time to right itself by anastomotic streams—a condition scarcely to be looked for when an aneurism is the cause of the vessel being ligatured, because in all such instances there is a sort of anastomotic circulation established around the aneurism during the progress of the disease, and thus arterial blood is directed into the vessel below the site of its aneurismal affection. Mr. Maunder further expressed an opinion that ligature of the femoral artery was not so severe an operation when practised on a patient free from arterial disease, and referred to the ligature of this vessel in cases of wound of the knee-joint attended with alarming symptoms, and of disease of the joint giving rise to conditions which threaten life, or necessitate amputation.

Dr. Anstie and Mr. Callender referred to the importance of the question raised by Mr. Maunder; and Mr. Hulke, after noticing a case in which the spermatic artery had been tied by Mr. Moore for a fungoid protrusion of the testicle, drew attention to the difference between ligaturing an artery, and the troubles connected with compression of the vessel by reason of the injury at the same time inflicted upon the vein.

Dr. Williams also referred to the applicability of compression, and regretted time did not admit of further discussion of the subject.

OBSTETRICAL SOCIETY OF LONDON.

Dr. Hall Davis, President, in the Chair.

Dr. Wynn Williams exhibited a specimen of Ovarian Tumour, and gave full details of its dissection.

Dr. Heywood Smith exhibited an early Fœtus, in which an intra-uterine rent of integument had occurred. Referred to a committee for further report.

Dr. Gervis exhibited a Double Monster, in whose delivery there were several points of obstetric interest.

Dr. Tilt read a paper on

IRRITABLE UTERUS,

The author commenced by objecting to the term "irritable uterus" as representing a pathological nonentity, unless it were only intended to mean the aggravated uterine neuralgia that may accompany any kind of chronic uterine and ovarian disease in women of highly susceptible nervous system. He remarked that the eminent practitioner who invented the term, and thought it represented a new disease, was well aware of the neuralgic character of the phenomena he had observed, comparing it with the hysterical joints of young women, of which Sir B. Brodie had then lately written. Dr. Tilt observed that it was not Gooch's fault if when he wrote uterine pathology was in a very defective state, for the means of diagnosis were so very imperfect that he could not separately identify several chronic uterine diseases that set on foot and kept alive that distressing form of neuralgia which he looked upon as a separate disease. Dr. Tilt maintained that there was no greater difference between the intense form of uterine neuralgia called "irritable uterus" and the ordinary pains of uterine disease than between the toothache of a long-diseased fang and the toothache of a comparatively healthy tooth, or than between an ordinary headache and the excruciating cerebral neuralgia of brain-tissue, the nutrition of which has been impaired by years of confinement to a sick room. He considered the paramount cause of uterine neuralgia to be a morbidly inclined nervous system, without which severe uterine disease will not cause severe uterine neuralgia. Given this morbid tendency, and a very slight amount of any kind of uterine or ovarian disease may cause all the symptoms described as "irritable uterus." It may be congestion of the womb, or metritis, or cervical ulceration, or uterine displacements and flexions, the amount of mischief being often small, but there is always evidence of the womb having been more or less diseased for many years. Entertaining these views, Dr. Tilt entirely dissented from the statement lately put forth by Dr. Graily Hewitt, that "irritable uterus" was nothing more than retroflexion of the womb in a marked form. Dr. Tilt found aggravated uterine neuralgia to be of such rare occurrence that he could not understand how it could be considered of comparative frequent occurrence, unless the name was given to ordinary cases of retroflexion. Neither could he reconcile the assumed possibility of almost universally curing irritable uterus by the use of the American pessary with the well-known fact that many of these cases of aggravated uterine neuralgia are actually made worse by surgical manipulation.

Dr. Meadows then read a paper on

FLEXIONS OF THE UTERUS.

The author began by asking whether the congestion and inflammation, with the attendant pain and local distress, which are so frequently present in uterine flexions, are the cause or the consequence of such flexion. He pointed out the practical bearing of the question in its relation to therapeutics, showing that if they were the cause of the flexion, treatment should be mainly directed to them; but if the consequence, then the mechanical reposition of the uterus claims first attention. Allusion was made to the recent advocacy of the latter view by Drs. Graily Hewitt, H. G. Wright, and others, from which the author expressed his entire dissent, maintaining that the former was entirely reconcilable with the clinical history of these displacements, and contending that the explanations offered by the advocates of the latter view were not borne out by facts. The author observed that in the great majority, if not in all, of the cases of uterine flexion which apply for treatment, congestion and inflammation of the uterus exist; and he adduced the following reasons for believing that this inflammation almost invariably precedes, and is the principal if not the sole cause of, the displacement:—1. That very commonly there is an antecedent history of uterine disorder. 2. That cases are often met with presenting very much the same general symptoms as those met with in uterine flexions, but where, on examination, inflammation without any flexion whatever is discovered. 3. When in such cases flexion takes place, the additional symptoms are due merely to the mechanical effects upon the surrounding parts, and are clinically separable from the preceding symptoms. 4. Cases of acute flexion are sometimes met with where no uterine symptoms whatever exist, and in such cases there is a complete absence of all inflammation. Various statistics were brought forward to prove that enlargement of the uterus from frequent gestation strongly predisposes to uterine flexion. Lastly, the author remarked that, for the foregoing reasons, our first care in the treatment of those cases ought to be to remedy that which is not only the cause of the flexion, but is at the same time responsible for by far the greater part of the patient's sufferings. When this is accomplished, but not before, we may resort to mechanical or other treatment for the reposition of the organ. The author believed that great evils would be likely to ensue if this plan of treatment were reversed.

Dr. Henry Bennet thought that the differences of opinion alluded to in the valuable papers just read might be briefly embodied in two views, which divided the profession, as it were, into two camps. One party attributed most of the varied forms of uterine suffering to displacements, whilst the other thought that these displacements were generally secondary, and often unimportant, and that the uterine suffering was generally the result of chronic congestion and inflammation. To this latter section he himself belonged. He was profoundly convinced that the real benefit to be derived from the treatment of uterine diseases generally was oftener prospective than present. There were so many sources of fallacy at the time of treatment, that it was in vain then to judge of the results obtained. The rest from usual occupations, the attention to general health, the removal of abdominal pressure from the uterus by the recumbent position, or the temporary removal of down pressure by pessaries, all contributed to produce a fallacious improvement. For his own part, he looked for the real result six months, a year, or more, after the entire cessation of treatment. He was not satisfied with an examination unless so made that every part of the cervix and its cavity was as clearly seen as the palm of the hand, or with treatment, unless all inflammatory disease was removed. Once treatment ended, he usually placed his patients under a good home-hygiene system, including cold water uterine douches, and then, if the patient be really free from inflammation, nature unaided generally does the rest, fines down hypertrophied tissues, and restores the uterus to its natural size. He had found that then, with few exceptions, his patients cared nothing at all for the displacements and flexions which often still existed; indeed, he had known patients who had had slight retroversions and flexions for ten or twenty years without any consequent trouble. He would also remark that there were two causes of uterine flexions which were not sufficiently taken into account—viz., arrested absorption of the uterine tissues after miscarriage or childbirth, and marital contact. After childbirth, the uterus had to fine down in six weeks from a weight of thirty ounces or more to that of two or one and a half, and any contusion or laceration of the cervix, any inflammatory action in any part of the uterus, arrests this process; the uterus remains at eight, six, or four ounces, and becomes displaced from overweight. Hence, to cure the displacement, it is necessary to treat the inflammation or lesion which has led to it. Marital contact, as a cause of displacement, was of still more frequent occurrence. If the cervix were rigid from inflammation, it was mechanically retroflexed, and thrust towards the sacrum, or if the uterus responded to the leverage, the latter was thrust forward in anteversion, and the cervix backwards. What mechanical treatment could permanently remedy such a condition, in itself innocuous, and most common in married women?

Dr. Graily Hewitt considered that, while the subject under discussion was of the very highest importance, and very suitable for discussion, it could hardly be settled by discussion alone. He felt much obliged to Dr. Tilt and Dr. Meadows for the courteous manner in which they had dealt with the matter so far as he was concerned. With reference to the point which he had in a recent paper contended, the identity, viz., of cases of supposed irritable uterus and cases of retroflexion of the uterus, the views expressed were the result of careful clinical study, and he had nothing on this head to retract or modify. Dr. Meadows had, however, inferentially allowed it to be supposed that he (Dr. Hewitt) thought little of inflammation of the uterus as connected with flexions of the organ. On the contrary, he believed that in almost all cases of flexion there was a condition of the uterus characterised by engorgement, congestion, enlargement, &c., pre-existing and predisposing thereto. So far then he entirely agreed with Dr. Meadows. But as to the question whether in cases of flexion the co-existing engorgement, increased bulk, and tenderness, constituting the "irritability," or "inflammation," as you please to call it, be the cause of the symptoms, as Dr. Meadows contended or the reverse, he differed from Dr. Meadows, and believed that pathologically, as well as therapeutically, the flexion was the prominent and remarkable feature of these cases. The tenderness of the uterus was generally limited to the displaced fundus which was usually sensitive to the slightest touch. The restoration of the organ to the proper shape was in his mind the first indication, and the success of this mode of treatment amply justified this view of the case. To treat the inflammation of the uterus without altering the shape of the organ appeared to him as illogical as the application of cooling lotions to the arm with the view of reducing a swelling and tumefaction due to a dislocated shoulder-joint. The parallel was not complete, but would serve to illustrate his meaning. The fact that the uterus was sometimes in such a state that rectification could not at once be attempted must of course, be recognised. The inflammation had to be treated undoubtedly, but in most cases, he contended, the mechanical rectification did remove, or materially improve, this so-called inflammation. He believed, with reference to the bearing of this subject generally, that further advances in uterine pathology must be associated with a full recognition of the importance of flexions of this organ. The os and cervix uteri, and their lesions, were of course important, but there could be no question that great errors had resulted from the adoption of a system of uterine pathology and treatment which practically ignored the disorders and displacements of the body of the uterus.

Dr. Tyler Smith believed that the condition to which Gooch applied the term "irritable uterus" depended upon hysterical hyperæsthesia, or hysterical neuralgia of the uterus, and that it might be associated with various uterine lesions, and often with none. Vaginismus was an example of extreme neuralgic sensitiveness, independent of local disease, and other illustrations might be adduced. At the same time Dr. Smith attributed much importance to uterine displacements, and believed that one common cause of retroflexion was perineal laceration, and that in this way displacement occurred without any disease of the uterus itself. He thought that the cases in which the suffering was slight were exceptional.

Dr. Rasch said that a great deal of discrepancy in the opinions of different authors would disappear if pure cases of flexion were properly diagnosed from those complicated with infiltration of the ligaments, inflammation of the ovaries, adhesions, &c. After describing his mode of exploring the pelvis, he stated his belief that flexions were by no means the harmless affections they were asserted to be by some. The symptoms were mostly well marked, and the relief given in properly selected cases was very striking.

Dr. Head had for some time, in all aggravated cases of retroversion, made examination per rectum, and had so frequently found the left ovary low in the pelvis, swollen and painful, that he was inclined to believe that the symptoms hitherto supposed by some to denote irritable uterus depended mainly on a morbid sensibility of the left ovary, and that this condition had been confounded with the so-called "irritable uterus."

◆

PATHOLOGICAL SOCIETY OF LONDON.

Mr. Simon, F.R.S., President, in the Chair.

Dr. **Peacock** exhibited the first specimen, an Aneurism of the Cerebral Artery, taken from a woman twenty-four years of age. She was attacked by paralysis and loss of speech, but rallied; on a second attack she never recovered from insensibility, and died. At the post-mortem there was extravasation of blood over the whole left side of the brain, extending to the vertex. At the place of the division of the internal carotid artery was a small sac the size of a filbert. There was no connexion apparently between the sac and the extravasated blood. There was softening of the corpus striatum and the optic thalmus.

Dr. Peacock also brought forward a specimen of Malformed Heart, sent him by Mr. Gascoyen. It was not of an uncommon nature. It had been taken from a cyanotic girl, aged eight years and a half, who died during an attack of dyspnœa. At the post-mortem, the pulmonary artery was found to be greatly diminished, its orifice admitting only a small probe. The aorta was large, and arose in part from the right ventricle, which was dilated. The foramen ovale was closed, probably in consequence of the free communication with the ventricles. The pulmonary artery divided almost immediately after its origin, and Dr. Peacock regarded the origin of the malformation as due to a premature obliteration of the ductus arteriosus.

Dr. Sanderson exhibited the Supra-renal Capsules and Liver from a patient who died with Addison's disease. The right supra-renal capsule could be felt post-mortem as a hard mass attached to the under surface of the right lobe of the liver. While the parts were still *in situ*, the splanchnic nerves were dissected out on either side, down to the semilunar ganglia, and a section was made of one of the ganglionic masses. It was found (*a*) that the ganglia and the nerves by which they were connected with the supra-renal capsules were surrounded by firm adventitious tissue. (*b*) That the *left capsule* was hard, firm, and semitransparent externally, soft, yellow, in some parts opaque and calcareous internally, and that it was so firmly incorporated with the kidney that they could not be dissected apart. (*c*) That the right capsule presented the same appearances, but was less disentegrated. It was united with the liver as firmly as the other with the kidney. Sections were made of the right capsule, and the part of the kidney adherent to the left capsule of the corresponding part of the liver. The external semitransparent part of the right capsule was found to present two distinct appearances. In some parts the normal cylindrical masses of cells which constitute the parallel laminæ of the cortical substance of the renculus in the natural state, with the sheaths of connective tissue by which they are limited and separated from each other, could be made out without difficulty, and seemed not to have undergone much alteration. In others there were masses of newly-formed material, which possessed the usual characters of adenoid tissue. In fact, the whole organ was encapsuled in a dense layer of newly-formed adenoid connective tissue, which extended therefrom inwards among the original cortical substance of the organ, being intermixed with it in such a manner that in every section some parts were met with which exhibited the characters of the new growth, and others in which the original structure could be made out more or less distinctly. In making sections through the indurated part of the liver, it was found that the induration was due to the interstitial growth of adventitious tissue, having the same character as that observed in the supra-renal capsule. The growth was not confined to the interlobular spaces, as is the case in those degenerations of the organ which consist in the formation of similar tissue throughout its whole substance, but evidently penetrated into the acini themselves, breaking up and separating from each other the converging columns of cell of which they are formed. In the left kidney the induration was of the same nature. Some sections exhibited nothing but new tissue, while in others the Malpighian capsules and the remains of the convoluted tubes were surrounded and apparently compressed by the heaping together of innumerable corpuscles. These facts tend to show interstitial growth of semitransparent masses in an organ, which growth, although it may have the structure of grey granulations, and undergo caseation in the same way, is not necessarily connected with a general process of tuberculosis.

Mr. Carr Jackson presented some interesting specimens—a portion of osteoid (recurrent) Cancer of the Lung; a Calculus of phosphatic nature, which had taken its origin from a piece of fine wire introduced into the bladder of a boy ten months before removal; and, lastly, a Mulberry Calculus, which had been growing ten years probably, and was removed from a lad in Northamptonshire, who for several years had been compelled to pass water every quarter of an hour; the lad is doing well.

Dr. Murchison detailed the appearance found in the skin and liver of a person who had died with liver disease and vitiligoidea. After death the changes in the skin were seen to be due to the presence in the cutis of oily matter made up of minute granules, with cells agglomerated, and nucleated cells. This material was in large quantity and ran out on section in oily patches. The liver weighed eighty-one ounces, and was made up of two parts—the one a dense white material, and scattered through it jaundiced patches, containing the remains of the lobules of the liver. On microscopic examination a large amount of nuclear deposit of fibroid or adenoid deposit was detected. Dr. Murchison thought the disease might be the early stage of cirrhosis.

Dr. Fagge said he was compelled to modify the statement he had formerly made in regard to the constant relation between jaundice and vitiligoidea. Cases do occur without jaundice, though he thought there might be a form of jaundice existing independently of obstruction to the bile-ducts.

Mr. Birkett exhibited a Fibro-plastic Tumour, removed from a man aged thirty-three by amputation of the thigh. Six or seven years since in consequence of a blow on the left knee, a swelling appeared. The tumour increased without giving rise to much inconvenience till within the last seven weeks, when ulceration, and subsequently hæmorrhage set in. The man was admitted into Guy's Hospital, and had not been there two hours before serious hæmorrhage occurred. The limb was then removed, the bone being very hard at the seat of section. The growth presented the features of white tissue, minutely lobulated, breaking up easily into lobules, which were themselves very dense and firm. The disease was not an infiltrating growth, and was independent of bone, and under the microscope it was seen to be made up largely of fusiform cells. This specimen was referred to the Committee on Morbid Growths.

Dr. Fagge exhibited a living specimen of Scleroderma, in which hardening and tension of the skin began at the neck, and extended nearly all over the body. A reference was made to the relation between Addison's keloid, morphæa, scleroderma, and leprosy.

Mr. Sydney Jones showed an Enchondromatous Tumour removed from the scapula. Its measurements were, in different directions, nineteen, fifteen and a half, and sixteen inches; its thickness about nine inches.

Dr. Crisp exhibited the Cerebellum of a young lady aged thirteen years and a half, who died in a short time from rupture of a vessel in the left lobe. He thought that there were not many cases on record where a girl at this early age, in good health, and with all the organs of the body apparently in a normal state, had died of sanguineous apoplexy. As far as his researches had gone, he found that the greater number of these cases of sanguineous apoplexy in early life was among the female sex, a circumstance that behoved all hereafter to look carefully to the condition of the uterine appendages.—Dr. Crisp also exhibited the Kidneys of a young man who had died of phthisis. They were excessively congested, and weighed fourteen ounces and a half. The patient had been a large spirit drinker.

Mr Pick, for Mr. Prescott Hewett, exhibited a specimen of Fibro-cystic Tumour of the Breast, said to have been followed by cancer of the axillary glands, which, however, were not examined.

Mr. Birkett remarked that if the sequence mentioned were true, it would thoroughly alter the present diagnostic data in regard to diseases of the breast. The tumour was referred to a committee.

Editorial.

SOME NEGLECTED POINTS OF ETIOLOGY.

Few things are more striking in medical science than the change which has come over the etiological department. The discoveries of recent years as to the locality and laws of transmission of the contagium of some diseases have given quite a new importance to this department, and it has had a very engrossing amount of attention. Medical science has been almost overpowered by sanitary science; therapeutics have been thrown into the shade by hygiene and prophylaxis. We have no fault to find with this; but it is a fact to be observed. Medical philosophy would be very imperfect if it did not take into account the causes of disease; and if we may not hope just yet to separate, in all their chemical and physical individuality, the poisons which produce very defined forms of disease, we may prosecute, without any undue presumption, those researches which have already been so fruitful of good into the laws by which these poisons operate, or may be prevented from taking effect.

We propose to-day to say a few words in reference to some more disregarded causes of disease, which all physicians, however, will admit to be most potential.

One can scarcely fail to observe how intensely physical all our etiology has been of late years. This is only a part of a larger fact, that all our science has been more and more physical. And in regard to large classes of the most dreaded disorders, such as cholera and the eruptive diseases, they have been pretty well demonstrated to depend on a material contagium that can be carried, or kept, or destroyed. We have been startled lately by experiments which seemed to demonstrate the gross material transmission of tubercle, and some would go so far as to believe in the gross material origin of most cases of tubercular disease. We can only await the development of science for more specific knowledge on this and kindred points. But we think it not untimely to suggest to the profession, and especially to the stricter students of the causation of disease, whether we are not in this rage for a physical etiology overlooking too much those psychical influences which all good physicians have recognised as causes of disease. For some years prior to 1866 the population of this country was subjected to the complicated influences of a great and general prosperity, involving the extensive and sudden acquisition of wealth, and, in some degree, status, without any corresponding amount of education or culture. If anybody doubts the effect of this set of conditions on the nature of men, on their physical and mental health, let him read the observations of Dr. Maudsley and others who have given special attention to this subject. "In several instances," says Dr. Maudsley, "in which the father has toiled upwards from poverty to vast wealth, with the aim and hope of founding a family, I have witnessed the results in a degeneracy, mental and physical, of his offspring, which has sometimes gone as far as extinction of family in the third or fourth generation. When the evil is not so extreme as madness or ruinous vice, the savour of a mother's influence having been present, it may still be manifest in an instinctive cunning and duplicity, and an extreme selfishness of nature—a nature not having the capacity of a true moral conception or altruistic feeling." Since 1866 the whole population has been subjected to commercial depressions, which have not only affected seriously its material condition, but have been calculated to produce psychical states which must have most important bearings on the public health. Yet in all our speculations as to the causes of the disease with which we are dealing, how seldom do we consider this. Our present social and commercial condition involves worry and anxiety in hundreds of cases where it does not involve want. It involves extensive humiliation or the loss of social caste. It must have postponed many marriages for a time, and some for all time; and, apart from this crisis, the amount of marriage in the country was far below the amount necessary for the satisfaction of that virtuous love which has been the subject of praise by philosophers and poets from time immemorial. The dulness of trade since the crisis must have intensified the competition, keen enough before, necessary in order to what is now-a-days called success, which means the acquirement of the wealth necessary to the gratification of an unprecedented and most unphilosophical number of wants. The list of psychical states that as physicians we ought to keep in mind would not be complete if we did not mention the rude shocks of faith of late years which an intensely physical science has to answer for. Surely, then, these are not times in which we can afford to disregard influences which have always been considered powerful. The difficulty in getting a sufficient consideration for them now arises from the difficulty of gauging them in individual cases, and of differentiating them from those material conditions which very often accompany them; also from the very variable degree in which they affect different persons. There is almost necessarily a vagueness about our information concerning such influences. But though these are explanations of the present tendency to disregard them in favor of more ascertainable and material facts, yet they are no justification of the tendency. If the effect of worry is vague and variable, so also is the effect of the material of small-pox. If a man who has gone through an amount of anxiety, which would have explained a break-down in his health, escapes unscathed, so have we known an unvaccinated child lie for a week in the same bed with its nursing mother covered with small-pox, and yet escape unscathed. It is not in the nature of any morbific cause to act with perfect uniformity. The only way to make our knowledge on this subject more specific is by a more distinct recognition of the psychical class of influences. And no man in much practice will have very far to look for facts in this direction. Anxiety has long been associated, causatively, with the production of cancer or jaundice, often both. Some very interesting cases of acute rheumatism, remarkable for their fatal termination, and a rapid rise in the temperature before this event, are recorded in the admirable Transactions of the Clinical Society just published, in the history of which the pre-existence of care and anxiety is specially recorded. Diabetes seems to have some strange relation to the neuroses, and is strikingly under the influence of mental conditions. The development of phthisis will often be determined as much by mental as physical circumstances. We need say nothing here about insanity, which seems to increase, at least a little, with our increasing civilisation; about hysteria or epilepsy; about a degree of moodiness or melancholia which scarcely is made the subject of complaint, but which is not health. We have said enough to remind medical men of the propriety of regarding all mental and moral influences in their wish to be accurate in judging of the causation of disease. We shall not be accused of any disposition to underrate the importance of the physical elements in etiology. We rejoice in the progress of our knowledge concerning them. But it is, above all things, necessary that the physician be comprehensive in his views. To be a true physician he must be broadly human in his philosophy.

There is a cause of disease which used to be greatly considered, but which has of late been rather neglected—that is, cold. Dr. Rumsey, in his interesting address on Public Health at the Social Science meeting—to be published, we, believe, separately,—suggested that, in the strength of our new convictions of the necessity of fresh air, we were rather apt to forget the evil of having too much of it, or of having it at a ow temperature. The older physicians thought more of cold as a cause of disease than of almost anything else. And indeed it is a mighty producer of disease aud death, which has of late been greatly overlooked. It slays its thousands every week in the winter months, into which we are just passing. It indirectly favors the development of typhus epidemics by favoring overcrowding. It causes pneumonia and bronchitis and pleurisy in people who do well in our English summers. It sometimes kills apparently by mere shock. It is no friend to any diathesis. In short, it is a lethal influence to be feared as much as an epidemic poison like that of influenza or cholera.

NEW VIEWS ON THE CONSTITUENTS OF THE URINE.

WHAT is the mode and what the place of origin of the chief urinary constituents—urea, uric acid, and kreatinine? Up to within a very recent period almost all physiologists would have replied that they proceeded from the disintegration of the muscles, or of the albuminous compounds absorbed into the blood from the food, and that in the case of the muscles there was reason for believing that kreatin was one of the first stages in the retrograde process, since this was to be abundantly obtained from muscle, and probably underwent further oxidation into kreatinine and urea in the blood, in which the constant presence of urea had been incontestably proved by M. Picard. Munk, in 1862, gave additional support to this theory by stating that if kreatin be administered with the food, both in the dog and in man, an increase in the elimination of urea and kreatinine occurred. Broadly speaking, therefore, it was generally held that the kidneys are a filter which separates from the blood constituents already present in it. A different view has, however, been lately put forward by Oppler, Ssubotin, and Zalesky, to the effect that the chief urinary constituents, and especially urea, do not exist preformed in the blood, but are formed at and by the kidneys themselves. They rest their opinion on the following grounds: First, that extirpation of the kidneys, instead of occasioning, as might have been expected a large accumulation of urea in the blood and tissues, is followed by only a trifling increase in the amount of urea, although the quantity of kreatin and other secondary compounds, from which the urea probably proceeds, is largely augmented. Secondly, that if, instead of extirpation of the kidney, the operation of ligaturing the ureter be resorted to, it can be clearly shown that a great increase of urea in the blood and tissues occurs, which was to be anticipated, since the kidneys themselves are left uninjured by the operation, and the urea formed in them is, by its ready diffusibility, rapidly reabsorbed. Thirdly, Zalesky states that no uric acid can be discovered in the blood of the bird, though this is the chief constituent of their urinary secretion. And again, if kreatin be digested with the substance of the kidney reduced to a pulp, it undergoes conversion into urea. Lastly, in regard to the circumstance that if kreatin be administered with the food more urea and kreatinine are eliminated, it is held that it is just as likely that the transformation occurs at the kidneys. There appears to be nothing improbable in this view, since we have reason for believing that the essential elements of most secretions are formed in the organs by which they are poured forth—as ptyalin by the salivary glands, the resinoid acids of the bile by the liver, and so on. The fact that the kidneys are excretory organs seem to offer no reason against their effecting the formation of the principal products of their excretion from the constituents of the blood adapted for that purpose. Within the last few weeks, however, the facts of the case have been called in question by Voit and Meissner, the authority of both of whom is deservedly high. Voit found that urea did accumulate in the blood and tissues, both after extirpation of the kidneys and after ligature of the ureter, though the proportion was larger in the latter case, simply because the animals lived longer The total quantity obtained in one case of extirpation was just about the same as the animal would have excreted if its kidneys had been left intact. He found, moreover, no increase in the kreatin and other secondary compounds after either operation. He supports the old view, that urea is preformed in the blood, though its production may also take place in the tissues. Meissner, again, operating on large quantities of the blood of the bird (goose), obtained a quantity of uric acid sufficient, in his opinion, to account for the whole amount eliminated per diem, supposing the kidneys merely to act as a filter. Moreover, he found no increase of urea after the use of kreatin. But his analysis of different tissues in birds led him to the remarkable conclusion that the chief constituent of their urine, uric acid, was chiefly formed at the liver, since that organ contained it in far larger quantities than any other in the body. Pursuing his investigations upon the same point in mammals, he here also obtained evidence that urea is produced in the liver, and he attributes its development to the disintegration of the hæmaglobin of the effete red corpuscles of the blood into urea, glycogen, and biliary coloring matter. In corroboration of his views, he refers to pathological evidence derived from the statements of Frerichs, Stadeler, and Harley, to the effect that the quantity of urea is greatly diminished in the urine of those affected with chronic, and altogether absent in those with acute, atrophy of the liver. Amidst this conflicting evidence, it is, we admit, difficult at present to draw any positive conclusion.

PATHOLOGY OF VESICULAR AND PUSTULAR SKIN DISEASES.

IN a recent number we noticed the observations of M. Biesiadecki on the mode of formation of a blister. We proceed to give the summary of another interesting essay by the same author, on the structure of the skin, and on the pathological anatomy of certain common cutaneous affections. In most of the modern text-books the limit between the corium and epidermis is drawn or described as being exceedingly well defined. According to M. Biesiadecki, this is not quite an accurate statement. In newly born children, and even to some extent in adults, the two structures are continuous with one another. In infants the superficial portion of the corium consists of a homogeneous protoplasm, with fine granules; and the stratum Malpighii or rete mucosum consists of the same granules, which have enlarged and invested themselves with a definite portion of the protoplasm. These as they gradually become more superficial, assume a flattened form and horny character; the change commencing with the shrinkage of the nucleus, causing it to be surrounded by remarkable and sometimes very regularly arranged vacuolæ. Besides the ordinary rounded cells the rete mucosum also contains other elongated cells, resembling connective-tissue corpuscles, which proceed from the connective tissue of the corium, and are in fact, identical with the migratory or wandering cells of Recklinghausen and others. They are small, fusiform, elongated, and often branched, containing one or two long, staff-shaped nuclei, and play an important part in cutaneous diseases.

As regards the pathological anatomy of the skin, Biesiadecki states explicitly that all the various forms of cutaneous disease are essentially of an inflammatory nature, differing *inter se* only in the extent and part of surface affected, and in the greater or less intensity of the inflammation present.

In regard to eczema, in which numerous little elevations form that subsequently become vesicles, and either burst, leaving a moist surface, or form pustules, a careful examination of hardened specimens shows that the papillæ are the chief seat of the disease; and that in the earliest stage these become broadened and elongated, consequent upon the exudation of a clear, serous fluid. The connective-tissue corpuscles, stimulated in their growth by the abundance of pabulum, enlarge, become succulent, and multiply; and the resulting free cells migrate from the papillæ, and insinuate themselves between the cells of the rete mucosum.

Such cells present an elongated form, are often branched, and their prolongations, which may extend as far as the corneal layer of the epidermis, unite to form an irregular network, within the meshes of which the cells of the rete mucosum are enclosed, distinguished by their rounder shape and less granular appearance. Biesiadecki considers that these wandering or nomad cells of the papillary connective tissue constitute a system of nutritive canals for the mucous layer, and that by their agency so large a quantity of the serous fluid infiltrating the papillæ is brought to the rete mucosum, that the cells of this layer become greatly swollen, and possibly burst. The epidermis, thus separated, appears as a minute blister, and, if this be detached, the wet surface of the mucous layer remains.

M. Biesiadecki had a good opportunity of observing the mode of formation of pustules in a man who died from pneumonia, whilst suffering from herpes zoster, in whom not only were the vesicles well marked, but in whom many pustules were also present. In the development of these, the cellular elements within the papillæ had increased greatly in number, infiltrating the whole thickness of the corium, as well as the subcutaneous connective tissue. The bloodvessels were dilated, and tightly packed with blood-corpuscles. The spindle-shaped cells had made their way into the rete mucosum in still greater numbers than in the vesicular stage, and had there immediately divided so as to form quite a row of roundish cells lying on the corium. More superficially, little clumps of pus-corpuscles appeared lying in the meshes of fine fibres, which last resulted from the elongation and compression of the cells of the upper and middle layers of the rete mucosum that had become somewhat hardened and had lost their nuclei. From all this it appears that the pus-cells of pustules do not, as has hitherto been supposed, proceed from the multiplication of the cells of the rete mucosum, but from the spindle-shaped cells of the connective tissue of the papillæ, which migrate to the surface, there multiply, and form collections of pus-corpuscles, traversed by fibres composed of the compressed cells of the rete mucosum the whole being covered in by the laminated layer of tesselated and cornefied epithelium.

STRUCTURE OF THE TACTILE CORPUSCLES.

The discovery of the corpuscula tactûs by Wagner in 1852, and by Meissner in 1853, led to much investigation by various observers, who, however, were by no means always in accord with each other in respect to the mode of termination of the nerves in the skin. Subsequent to these investigations a new and peculiar form of corpuscles was discriminated by Krause, presenting certain resemblances, to a Pacinian body, and also to Meissner's corpuscula tactûs, and which we may here briefly describe. Krause's corpuscles (*endkolben*—terminal knobs) are found in the conjunctiva, lips, tongue, buccal mucous membrane, penis, and clitoris, and appear as minute swellings of about 1–1250th of an inch in length, and rather less in breadth, invested externally by a sheath of connective tissue, with nuclei imbedded in it. Within this sheath is contained a hyaline, faintly-granular soft material, through the axis of which courses the nerve-fibre deprived of the neurilemma and white substance of Schwann. Now it will be remembered that Meissner's corpuscles are described as being widely distributed over the body, and as forming an oval mass which occupies the greater part of a cutaneous papilla. The corpuscle is of a dull granular aspect, apparently possesses soft contents, and a nerve-fibre, or sometimes two fibres, may be traced to its base, at which point the nerve appears to lose its medullary layer, and to wind spirally round the corpuscle, which consequently presents a very peculiar horizontally striated appearance.

The characters of a Pacinian body are too familiar to our readers to need repetition.

Kölliker, whose authority is deservedly so high amongst histologists, includes all these structures in one category. They all, he remarks, possess these characters in common—first, that they present terminal nerve-fibres, with free and slightly swollen extremities; secondly, a central mass sometimes containing nuclei, and of the nature of *connective tissue*, serving to support and invest the nerve-fibre; and, thirdly, a general investing sheath of *connective tissue*.

In a recent article in Dr. Brown-Séquard's *Archives de Physiologie*, Rouget expresses his dissent from these views, and gives the results of his inquiries into this difficult subject. He believes he has proved that whilst the corpuscles of Meissner, and those discovered by Krause, are essentially similar, they both present well-marked points of distinction from the corpuscles of Pacini; and on the other hand, have a strong analogy to the mode of termination of motor nerves.

By very careful maceration of the conjunctiva in extremely weak acetic acid, to remove the epithelial layers, Rouget has been able to define the nature of these corpuscles with much greater accuracy than has hitherto been accomplished, and the following are the results he has obtained. In the first place, as regards Krause's corpuscles, he discriminates two forms, one in which there is a central corpuscle, up to the base of which a dark-bordered nerve-fibre runs, and at once proceeds to describe a series of ten or twelve circles around it, the coils being often so close that scarcely any of the corpuscle can be seen. In a second form the fibre, on reaching the corpuscle, loses its double contour, and becoming a grey fibre or axis cylinder, after describing a similar series of coils to the foregoing, finally plunges into the central corpuscle, which thus seems to be continuous with the nerve-substance, and not of the nature of connective tissue; and in this respect it differs essentially from the central mass of a Pacinian corpuscle.

As regards the corpuscles of Meissner, Rouget states that one, two, or more nerve-tubes proceeding from the subcutaneous network, run, according to their size, to the base of the papillæ, and reach the corpuscula tactûs. Here they become closely applied to the outer surface of the corpuscle, dip into its cortical substance, lose their double contour, and then, as in the former instances, describe a series of coils, which are so closely arranged that no part of the central corpuscle is visible, the nerve finally ending in the central mass, which may be regarded as its expansion. The analogy of this arrangement with the terminal plate of motor nerves requires no comment.

Medical Annotations.

"Ne quid nimis."

THE SIAMESE TWINS.

Articles have been appearing of late about the above individuals and their visit to Paris, with the object, as it had been asserted, of securing the surgical skill of M. Nélaton in making an artificial separation of that bond by which Nature has joined them together in a way which no Divorce Court can overcome. The subject was a good one on which to hang a little sensational writing; and the mysterious nature of the union of Messrs. Chang and Eng, the Siamese in question, as well as the intensely interesting nature of the operation, have been dwelt upon. We gather, however, from a short and interesting article by Dr. Eve, the late professor of surgery in the University of Nashville, in the number of the *Richmond and Louisville Medical Journal*, for October, that the twins have probably no intention of the kind, and that all the accounts about the physical, moral, and mental unity between them are incorrect; the twins are two beings possessing as separate and complete organisations as any other two individuals, the only connexion being a short cartilaginous and integumental band common to both, the severance of which would, in all probability, be perfectly harmless. It has never been the opinion amongst medical men in America or Europe that the death of one of the brothers would be instantly followed by that of the other, or that their separation was surrounded by any fearful difficulty, or that the link between them is a means of perfect physical union by which sensations or impressions are conveyed from one to the other. So far from it, the band is almost insensible, and on shipboard they were pulled about by a rope tied to it. Dr. Eve tells us that no pulsating vessel has ever been detected in it, though, undoubtedly, it is just in the centre of this cord, made up of gristle and skin, and for about an inch on either side, that there are vessels and nerves communicating from one to the other. Here, but nowhere else, a touch on the space indicated is felt by both. Precisely here, and here alone in the band uniting them, there is sensation, and nothing else whatever common to both.

The decision of the profession thirty-eight years ago, when this case was first exhibited, was that the ligament was cartilaginous, probably a prolongation of the ensiform cartilage of the sternum; and the chief, if not the only, objection to its division has been that the peritoneum might be involved in the operation. The question of separation was with themselves or their guardians, and not with the profession. In 1830 we declared that the case was more rare than curious. If one of them died, it would certainly be the duty of some one to make the attempt, taking care to divide the parts nearer the one deceased.

ANTICEPTIC SURGERY.

M. Maisonneuve, of Paris, contends that it is our own fault if the results of the great operations of surgery are not favorable. He summarises his method as follows:—"Lifeless organic liquids are the only cause of untoward state of wounds. The indications, therefore, are to prevent the death of the organic liquids, and to eliminate them when deprived of life. To fulfil the first indication we must prevent the prolonged contact of living fluids with dead organisms, be the latter solid, liquid, or gaseous. To fulfil the second, we should eliminate dead fluids by counter openings, irrigations, or drainage, but especially by continuous aspiration or sucking up, which last measure may advantageously replace all those above mentioned." This aspiration is carried out by means of a bag connected with tubes.

M. Jules Guérin contends that he is the author of this method, having all his life advocated subcutaneous surgery. He, however, does not like M. Maisonneuve, pay attention to dead liquids; his object is to prevent complications by an apparatus either before or after the introduction of air which he calls pneumatic occlusion.

Such is the difference of views and practice between these two ingenious men, who, after having worked together in this field of inquiry in a friendly manner, are now engaged in rather bitter polemics.

M. Maisonneuve states now that his method is carried out among the patients at the Hôtel Dieu, he does not see any fatal cases after amputations, compound fractures, &c. These favorable results naturally bring to mind the success which is nowadays attending Lister's method. The latter surgeon endeavors to prevent the admission of germs into wounds, and thus considers that no decomposition takes place. M. Maisonneuve prevents the death or decomposition of fluids by a sucking or aspiring apparatus; and M. Jules Guérin by pneumatic occlusion, as he calls it—i. e., atmospheric compression and exclusion of air. Maisonneuve and Guérin are not so generally imitated in France as Lister is in Britain. Let the three methods abide the best of trials—viz., the trial of time.

OVARIOTOMY IN ITALY.

Ovariotomy, which has now become so common an operation in this country, and to which our German and Gallic neighbors are beginning to be accustomed, is still a surgical proceeding of supreme importance in countries where it has seldom been adopted. In Italy, the operation had until now been performed eleven times only, and this accounts for the great enthusiasm with which a twelfth case, which has just occurred at Pisa, is spoken of and commented upon in the Italian medical journals. Professor Landi has been the venturesome surgeon who has added the twelfth operation to Italian experience of ovariotomy, and it is said that he accomplished his task beautifully. This is so much the more to be admired as it was his first attempt, and as he undertook it before a very large attendance of curious and anxious compeers. Not only all the medical officers of the hospital, but all the medical men of the town and suburbs, nay *confrères* from Leghorn and still more remote localities, crowded round the operator to witness the performance. Things went off in the best possible manner; no unfavorable circumstances troubled the course of the operation, and a large unilocular cyst, weighing with its contents fourteen pounds, was successfully extracted. Since then the state of the patient has progressed favorably. The Italian journals are warm in their praises of the courageous lady who submitted to the operation, and of the surgeon who undertook it, and we join in their wish that an operation which has produced such excellent results elsewhere, and saved so many lives seemingly condemned to death, may prosper in the warm climes of the South.

A BLOW TO THE FUNGUS THEORY OF DISEASE.

In a short communication to the *Centralblatt*, Drs. Bergmann and Schmiedeberg describe a crystalline substance, to which they have applied the name "sulphate of sepsin," obtained from putrefying materials, and which they believe represents the proper poison of organic substances undergoing this kind of fermentation. It is obtained by diffusion through parchment paper, precipitation with corrosive sublimate from an alkaline solution, removal of the mercury by silver, of silver by sulphuretted hydrogen, evaporation, and purification of the residue. Large, well-defined, acicular needles are thus obtained, which are deliquescent in the air, and, exposed to heat, melt and carbonise. They possess a powerfully poisonous action. A solution containing scarcely more than one-hundredth of a gramme was injected into the veins of two dogs. Vomiting was immediately induced, and after a short time diarrhœa, which in the course of an hour became bloody. After nine hours the animals were killed, and on examination their stomachs and large intestines were found ecchymosed and the small intestine congested. Frogs could be killed in the same manner.

DR. LIVINGSTONE.

The doubts so long entertained as to the safety of this illustrious traveler are to a great extent set at rest by the news lately received from Dr. Kirk, who writes from Zanzibar under date of the 30th of August last, to inform Sir Roderick Murchison that he had received through an Arab messenger short letters from Dr. Livingstone, written at Marungu and Cazembe as recently as December last, reporting "all well." Living with friendly Arabs, and waiting for the close of a native war that he might proceed unmolested, Livingstone has indicated the line he intended to take on his return to Zanzibar; and as messengers with provisions, medicines, and letters had been dispatched to meet him on his way, Sir Roderick Murchison thinks it possible the next intelligence we receive of him may be brought by himself before Christmas arrives. Of the "hearty welcome" which awaits the intrepid explorer when he is restored to us, the interest manifested by all classes in his safety gives abundant promise.

A YOUNG MOTHER.

Our correspondent, Dr. King, of Rochford, Essex, has forwarded us a communication in which he states that he had recently attended the confinement of a girl under eleven years of age. The mother and infant were both well. Dr. King verified the fact by an inspection of the girl's register of birth. This is probably the youngest example on record, and we earnestly hope that it may continue to be so, for it manifests a depraved precocity which is truly lamentable in a Christian country.

The Richmond and Louisville Medical Journal (edited by E. S. Gallard, M.D.) for the month of October, is a more than usually interesting number. In addition to an article on the Siamese Twins, it contains a paper on Chronic Pneumonia and its relation to Tuberculosis, by J. L. Cabell, M.D.; another on the Origin of Cholera in Hindostan and its Conveyance to Europe, by Dr. Peters (illustrated by a map); also a Clinical Lecture on Paraplegia, delivered at the Philadelphia Hospital, by Prof. Stillé; and other papers.

Reviews and Notices of Books.

Therapeutics and Materia Medica. A Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. By Alfred Stille, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine in the University of Pennsylvania. Third Edition, revised and enlarged. In two volumes. Philadelphia: Henry C. Lea. London: Trübner and Co.

We need not dwell on the merits of the third edition of this magnificently conceived work. It is *the* work on materia medica, in which therapeutics are primarily considered, the mere natural history of drugs being briefly disposed of. To medical practitioners this is a very valuable conception. The only question is as to the execution of a work on materia medica so conceived. And the appearance of a third edition of so large a work in eight years may be accepted as weighty evidence upon this point. It is wonderful how much of the riches of the literature of materia medica has been condensed into this book. The references alone would make it worth possessing. But it is not a mere compilation. The writer exercises a good judgment of his own on the great doctrines and points of therapeutics.

The only criticism called for is as to the statement of the uses of those medicines which have either lately come into use or been recently the subjects of special attention—such as the Calabar bean, conium, and cannabis indica, or bromide of potassium, carbolic acid, sulphurous acid, alkalies, &c. The treatment of many of these subjects is remarkably good, including accounts of the latest researches. The treatment of others is less satisfactory. For example, while there is a long notice of the use of nitrate of potash in acute rheumatism, and of the doubtful practice of giving large doses, the use of bicarbonate of potash in this disease is not even mentioned; though it is now in Britain probably the remedy most employed, and certainly a safer one than large doses of the nitrate. Sulphurous acid is noticed very cursorily. But these defects in a work of such magnitude are not remarkable, and do not alter the fact that for purposes of practice Stillé's book is almost unique as a repertory of information, empirical and scientific, on the actions and uses of medicine.

Treatise on the Diseases of the Eye, including the Anatomy of the Organ. By Carl Stellwag von Carion, M.D., Professor of Ophthalmology in the Imperial Royal University of Vienna. Translated from the Third German Edition, and Edited by Charles E. Hockley, M.D., and D. B. St. John Roosa, M.D. (New York). With an Appendix by the Editors. Illustrated by 96 Wood Engravings and 18 Chromo-Lithographs. 8vo, pp. 774. London: Hardwicke. 1868.

The American translators of the "Lehrbuch der Praktischen Augenheilkunde" of Dr. Carl Stellwag von Carion, announce in their preface that they received from the author advance sheets of the third German edition, and that thus, although their labor as translators was much increased, their labor as editors was reduced almost to nothing. They have indeed added to the book a complete set of Jäger's test-types; a very brief appendix, entirely taken from Zander, upon the use of the ophthalmoscope and of lateral illumination (subjects of which the original author assumes complete knowledge in his readers); and a few notes, of such value and originality as the following, which we find appended to the chapter on Herpes of the Conjunctiva:—

> "We need to pay particular attention to the general condition, the diet, and mode of life in patients affected with this disease. We should see that they get plenty of fresh air, and that they are under hygienic influences in general."

Excepting for such additions, the volume before us differs from the original only in being nearly double its price, and in being in the American language instead of in the German. The translation is, indeed, so faithful, that a few obscurities arising from style, and which an additional word or two would have removed, have been closely and exactly reproduced. Thus the description of Szokalski's operation for pterygium would be scarcely intelligible, either in the original or in the translation, were it not that a woodcut clears up the ambiguity of the text.

Of the work, as a whole, it is scarcely necessary that we should speak. A third edition of a book of such magnitude means in Germany very much what it would mean in England—that the ordeal of criticism had been passed successfully; and the translators are fully justified in calling it "a text-book which is regarded as one of the best in the German language." It deals fully and accurately with every branch of the subject to which it relates; and although it is in no way superior to other treatises of equal completeness, such as those of Wecker and of Seitz and Zehender, it will certainly supply, either for study or reference, all the reasonable wants of the practitioner.

Electro-Physiology and Therapeutics; being a Study of the Electrical and other Physical Phenomena of the Muscular and other Systems during Health and Disease, including the Phenomena of the Electrical Fishes. By Charles L. Morgan, A.B., M.D. Imp. 8vo, pp. 714. New York: Wm. Wood. 1868.

The author of this work died before its publication; and the responsibility for the manner in which it has been edited and published rests with the editor and publisher. The title-page gives great prominence to the word "therapeutics," as if electro-therapeutics constituted a chief feature of the treatise. In reality, of the 714 pages, only 25 are devoted to therapeutics; and upwards of one-third of this space is occupied by drawings copied from Ziemssen's "Electricität in der Medicin," the rest being taken up, for the most part, by a singularly imperfect rendering of some portions of the same work. Of the remainder of this ponderous volume, 681 pages are occupied with electro-physiology, and 6 with the index, exclusive of a synopsis of "contents," paged separately. If it were not for the assurance of the editor, Dr. William A. Hammond, that the work had been completed by the author, we should have come to the conclusion that it contained the crude and diffuse notes of a singularly earnest student in the German schools; for it consists chiefly of an attempt to give in copious detail, although in very crippled English, the published results of the labors of German electro-physiologists. The editor states that he has not felt himself warranted in changing the author's forms of expression, contracted through a long residence in Germany. It would have been more just to the author if this warrant had been taken, and if some excision had been made. The indifference of the editorship and the misleading character of the title-page do little honor to the memory of Mr. Morgan, and are less justifiable, because the work contains a mass of most valuable, although imperfectly digested, matter. To the student who is not familiar with the German language, the work will prove particularly useful. Mr. Morgan had mastered the theory, and largely the literature, of his subject; and it is to be greatly regretted that his life was not spared to complete the exhaustive survey of it at which, it may be inferred, he aimed.

News Items, Medical Facts, &c.

Compression in Epilepsy.—A quarryman (mentioned by M. Broca at the Academy of Medicine) had frequent epileptic fits, the advent of which he could tell by spasmodic twitchings of the right index-finger. To prevent the propagation of the irritation from the peripheral nerves to the central axis, M. Rozier, of Bordeaux, had a very ingeniously contrived compressor constructed, by means of which the radial and median nerve could be commanded immediately the aura was felt. This has answered the purpose for eleven months, the patient having been able to prevent all the attacks of which the aura had given him notice.

A **Coroner's Inquiry** has taken place in the Wrexham district in consequence of the death of a patient under chloroform for an operation for fistula. The evidence of the two medical men, Messrs. Griffith and Jones, who were jointly concerned in the operation, most completely satisfied the jury that no blame whatever attached to them, the verdict being that "the deceased died from the effects of chloroform properly administered."

Death of Professor Griesinger.—The Faculty of Medicine of Berlin has just lost one of its most distinguished members, Dr. Griesinger, whose works on forensic medicine, and several other subjects, had placed him in the first rank among the physicians of the day. The deceased is much regretted.

Dr. Nelaton has received from the King of Prussia a handsome porcelain vase, from the Royal Berlin Manufactory, as an acknowledgment of his professional services to Count de Goltz, his Majesty's ambassador in Paris.

PRINTED AND PUBLISHED BY
Wm. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 2. NEW YORK, FEBRUARY, 1869.

Lectures

ON THE

PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM;

AND ON THE

TREATMENT OF ORGANIC NERVOUS AFFECTIONS.

By C. E. Brown-Sequard, M.D., F.R.S.,

Fellow of the Royal College of Physicians of London; Member of the National Academy of Sciences (U. S.) Etc.

LECTURE I.

ON SPINAL HEMIPLEGIA.

(Continued from January No.—p. 6.)

Characteristic symptoms of spinal hemiplegia.—Cases of wound and other kinds of lesion of the spinal cord having produced in the limbs, the face, and the eye the paralæytic, ansthetic, hyperæsthetic, and the principal vaso-motor symptoms of spinal hemiplegia.—Cases of incomplete spinal hemiplegia.—Comparison of spinal with cerebral hemiplegia.—Treatment of spinal hemiplegia.

In many respects, the following case is a more instructive one than the preceding. In the first place, I saw this last patient when the paralysis was complete, and when all the symptoms were of very recent date. In the second place, the injury to the spinal cord, in the case I am about to relate, was not such as to produce at first paralysis in both sides of the body, as it was in the case of F——. I am indebted to the kindness of Mr. C. F. Maunder for the opportunity of seeing this case. The patient was first under his care at the London Hospital, and became afterwards an out-patient under my care at the National Hospital for the Paralysed and Epileptic. Some details of the case were kindly furnished me by Mr. Jas. Jackson, who was house-surgeon under Mr. Maunder, at the time the patient was received and treated at the London Hospital.

Case 2. *Incised wound of the right lateral half of the spinal cord, upon or near the roots of the last cervical pair of nerves: paralysis and hyperæsthesia of the right lower limb, and signs of paralysis of the vaso-motor nerve of the face, ear, and eye of the same side; complete anæsthesia to touch, tickling, heat and cold, and painful impressions in the left lower limb, with conservation of voluntary movements and of the muscular sense.*—Mary Ann C——, aged twenty-two, was admitted under the care of Mr. Maunder on Sept. 15th, 1862. She states that on the evening of that day she was engaged in a quarrel, when she received a stab with a pocket-knife, on the back of the neck. She fell almost directly after, and as she was unable to walk, she was carried to the hospital.

On examination, a transverse incised wound was found, about a third of an inch in length, slightly to the left side of the vertebra prominens. The patient has complete loss of motion of the right leg and thigh, but can move the left lower limb freely. She has total loss of sensibility of the left leg and thigh, but has hyperæsthesia of the right lower limb. She also has partial loss of motion of the right arm; she can easily raise the arm and move the fingers, but is unable to grasp *strongly* with the right hand, while, on the contrary, she possesses a great amount of power in the left hand and arm.

On placing our hand on the patient's body and limbs, a very marked difference of temperature was observed on the two sides—a fact concurred in by all who examined the patient. By some this difference was estimated at as much as ten degrees, but when the thermometer was applied it was ascertained that the right side (that of the paralysis of motion) was only two degrees warmer than the other (the anæsthetic side). She has partial ptosis with contraction of the pupil of the right eye.

On the left nates there is a diffused redness, with a tendency to bedsores. She passes her motions and micturates involuntarily. The urine is ammoniacal. Previously to the injury to her spine, her general health has been very good; but both her parents are dead from phthisis.

I saw the patient for the first time on the 20th of September, thirteen days after she had been wounded. All the above-mentioned symptoms existed, excepting what relates to the urine, bladder, and rectum; both these parts had regained their functions, and the urine had become normal. She complained of very acute pains, which seemed to proceed from the trunk and the lower limb on the left side—the anæsthetic side. These pains, which were quite similar to those apparently arising from the two small fingers after a violent blow on the elbow (upon the ulnar nerve), were not modified in any way by the voluntary movements of the various parts of that limb; neither were they increased or decreased by hard pressure or frictions or by violent flexion or extension of the toes, the foot, the leg, and the thigh, to which I submitted these parts to ascertain if they were entirely devoid of real sensibility. Every test showed that anæsthesia was absolutely complete, and that therefore these pains, which had appeared only a few days after the wound, were merely referred or subjective pains, due to a congestion or slight inflammation of the incised part of the spinal cord.

Comparing one with the other, the two lower limbs and the two sides of the body up to the mammæ and armpits, I found:

1st. That there was an entire loss of voluntary movement in the right lower limb, while the power of motion was perfect in the left one.

2nd. It was, of course, impossible, owing to the paralysis of the right lower extremity, to ascertain if the muscular sense was completely lost in it. There is no doubt, however, that that sense was at least notably diminished, as when the patient could not see that limb, she was not able to say in what position it was placed. On the contrary, I ascertained several times and by the various characteristic tests that the muscular sense persisted in its normal condition in the left lower extremity. For instance, without looking at this limb, she always knew where it was; and after the performance of any voluntary movement she had a perfect knowledge that the limb had obeyed her will and had full cognition also of the change of position which had been accomplished. She also could freely direct her movements towards an aim, performing them at will slowly or quickly, and she could also judge correctly of the resistance which I sometimes opposed to these movements. Besides, she was able to distinguish the lightness or heaviness of objects placed on the fleshy parts of that limb.

3rd. The right or paralysed limb had an increased sensibility to tactile impressions, to tickling, to pricking and other painful impressions, and also to heat and cold. The tactile hyperæsthesia existed not only everywhere in that extremity, but also in the abdominal and thoracic regions on the same side (the right) up to a semicircular line passing transversely from the armpit to the mamma. On the leg and foot she distinctly felt the two points of the æsthesiometer when they were only at a distance of six-tenths or five-tenths of an inch one from the other. She judged remarkably well of the shape of bodies applied on the hyperæsthetic parts. As regards heat and cold, and also pinching, pricking, &c., they were also felt more acutely than in the normal state, when applied to these parts. Tickling the sole of the right foot was felt more vividly than in health, although it excited only very weak reflex movements limited to the toes. In the left lower limb, as already stated, and also in the trunk on the same side, there was an absolutely complete loss of the sensibility to tactile or painful impressions, to tickling and to heat and cold.

4th. The patient was perfectly able to recognise, at once, what part of the lower limb, belly, and chest, on the right side, up to the limit of hyperæsthesia, was touched, tickled, pricked, pinched, or irritated by cold or hot applications.

5th. Near the median line, on the abdomen and on the inferior part of the chest, and also on the spine, there was on the left side (the anæsthetic one) a slight degree of sensibility in a longitudinal zone of about half an inch from the median line. On the other side, in about the same space, sensibility was not so great as in the other parts of that side (the hyperæsthetic one.)

Comparing now the parts of the body receiving their nerves from the neighborhood of the wound of the spinal cord and above it, I ascertain—

1st. That in the upper parts of the chest, above the limit of hyperæsthesia on the right side, there was a narrow semicircular zone where sensibility was diminished. A corresponding zone on the anæsthetic side had the same diminished degree of sensibility. In some parts of both thoracic extremities sensibility was also diminished. Having lost the notes I took relating to this part of the case, I cannot give more details on the various kinds of sensibility in these limbs.

2nd. Above the anæsthetic zone in the chest there was hyperæsthesia to painful and to tactile impressions. This increased sensibility was by far more evident in the right than in the left side. She felt the two points when distant nine-tenths of an inch on the left and five-tenths only on the right side. The neck also, but only on the right side, was hyperæsthetic to painful sensations. As regards tactile impressions, the skin of the neck on the right side was able to give the sensation of two points when the space between them was six-tenths of an inch, while on the left side they were both felt only when an inch and one-tenth distant from each other; showing hyperæsthesia in both sides, but considerably more in the right than in the other side.

3rd. The right pupil was markedly smaller than the other, but it was able to contract and dilate.

4th. The eyelids were nearer each other in the right than in the left eye, but the patient was able, by a great effort of will, to open for a moment the right eye, almost if not quite as much as the left one.

5th. The right conjunctiva was much congested, especially round the margin of the cornea, and a good many more small bloodvessels were seen there than in the other conjunctiva. The right ear was also redder than the left.

6th. The face and ear on the right side were warmer than on the left. The right ear was at a temperature of 95°, and the left gave in one trial 93°, and in another 93·5°, the room being at 68°.

7th. Most of the facial muscles on the right side were slightly contracted.

8th. The skin of the right side of the face was hyperæsthetic (as regards touch and pain). She felt the two points when the interval between them was six-tenths of an inch, while they were felt only when the interval was greater than one-inch on the left side. The tongue showed but very slight tactile hyperæsthesia, and in nearly the same degree on both sides.

9th. The senses of sight, hearing, smell, and taste, and also the intellectual faculties, seemed to be in a normal state.

10th. The respiratory movements were perfectly normal as regards their amplitude, frequency, and regularity. I did not detect the least difference between the two sides of the chest.

According to the expressed desire of Mr. Maunder, I prescribed for the patient a mixture of iodide of potassium and bicarbonate of potash in a decoction of bark, and pills of ergot of rye and extract of belladonna, besides an evening dose of fifty drops of tincture of henbane. Two days after (Sept. 30th) the subjective pains in the anæsthetic side were still very acute. On October 5th, when I saw her for the second time, they had abated. They went on diminishing gradually, while some real sensibility appeared in the parts from which these pains seemed to come. In the meanwhile the right, or paralysed lower limb began to reacquire some degree of voluntary movement. A new examination of her power of detecting on what part had been made a tactile impression showed that this faculty was altered for impressions on her feet. She sometimes thought that it was the left foot which was touched, when it was the right one, and also she did not always recognise what part of the foot was touched.

I saw her several times a few months later, and I found that she had acquired a little more feeling in the left lower limb, and more power of motion in the right one. But the amelioration in voluntary movements had been checked by the appearance of spasmodic movements, followed by contraction. The symptoms observed in the face and eye had persisted nearly to the same degree. Her general health had remained good.

The patient, whose remarkable case I have just given, has been seen by Mr. Maunder, and by my friends, Dr. R. M'Donnell (of Dublin), Dr. J. S. Ramskill, Dr. J. Hughlings Jackson, and Mr. J. C. Wordsworth, and by several members of the medical and surgical staff of the London Hospital. I have also shown her to the class of medical men attending my clinical lectures at the Hospital for the Paralysed and Epileptic.

I, of course, cannot say *exactly* what part of the spinal cord was incised in that case; but, judging on the one hand, from the location of the scar (the wound had healed already when I first saw it), and the kind of instrument which produced the wound, and, on the other, from the symptoms, it is clear—first, that the knife has divided transversely a great part of the right lateral half of the spinal cord; second, that this transverse incision was made either at the level of, or very near, the origin of the eighth cervical pair of nerves (the knife having passed between the last cervical and the first dorsal vertebræ or through the back part of one of these bones).

From the existence of a slight hyperæsthesia above the line of the wound in the left side, and also from the fact that the knife entered by the left side of the neck (close by the middle line, however), it must have been directed a little obliquely from the left to the right, and it is extremely probable that it has divided a small part of the left posterior column.

It would be impossible to find a more perfect collection of the striking symptoms of spinal hemiplegia than there was in this case. Indeed, it might serve as a typical case for the nosological characterisation of that peculiar form of paralysis, the complete spinal hemiplegia. We find in this case all the features I mentioned in the beginning of this lecture as generally co-existing in this affection. There was:—

In the right lower limb.	*In the left lower limb.*
Paralysis of voluntary movement.	Conservation of that movement.
Loss of the muscular sense.	Perfect condition of that sense.
Increased sensibility to touch.	Complete loss of that sensibility.
Ditto to tickling.	Ditto, ditto.
Ditto to heat and cold.	Ditto, ditto.
Ditto to painful impressions.	Ditto, ditto.
Higher temperature.	Lower temperature.
In the right side of the trunk and the right upper limb.	*In the left side of the trunk and the left upper limb.*
Incomplete paralysis of voluntary movement.	No paralysis.
Incomplete anæsthesia in some parts.	Incomplete anæsthesia in the corresponding parts.
In the face, eye, and ear on the right side.	*In the same parts on the left side.*
Constriction of the pupil.	Pupil normal.
Partial closure of eyelids.	No ptosis.
Congestion of eye and ear.	No congestion.
Temperature 95°.	Temperature 93° or 93·5°.
Increased sensibility.	Normal sensibility.
Contracted state of facial muscles.	Muscles in their normal state.

Besides these symptoms, there was another in this case, which I have not mentioned in the list I have given of the characteristic signs of spinal hemiplegia. It is, that on each of the two sides of the median line in front of the body and on the spine, there was a space of about one inch where the anæsthetic or the hyperæsthetic condition of the skin was not the same as in other parts. On the anæsthetic side there was some sensibility in that space, while there was less or no hyperæsthesia in the corresponding space on the hyperæsthetic side. This can easily be explained by the knowledge we have of the passage of nerve-fibres from one side of the body to the other, across the median line. If, as anatomy tends to show, the sensibility of the skin in the neighborhood of the median line depends on two sets of fibres—one from one side of the spinal cord and the other set from the other side, in case one side loses its function and the other has its function increased,—there must be some sensibility remaining on the anæsthetic side near the median line, and less hyperæsthesia on the other side near that line.*

---

* See an excellent paper, "On the Passage of Nerves across the Middle Line of the Body," by Professor Jeffries Wyman, in the *American Journal of the Medical Sciences*, April, 1864, p. 343.

This has been observed in this case, and in a few others.

Many clinical facts seem to prove that, when the spinal cord or the base of the brain is inflamed a change sometimes occurs in the nervous conductors of sensitive impressions, in consequence of which the patient loses the power of distinguishing clearly on what part of the skin an impression has been made. This alteration in the power of feeling tactile impressions occurred in the patient whose case I have just related. For some time after having been wounded she was able to recognise perfectly where an impression was made on her right lower limb. But after the appearance of symptoms of inflammation, that faculty was much altered in her right foot.

The following case which was observed by myself and by my former able assistant, Dr. J. Hughlings Jackson, is not so clear as that of C——; but it is, however, extremely instructive, especially on account of the fact that the seat of the injury in the spinal cord was higher in the cervical region than in the two cases I have already related. I have written this case from notes taken partly by Dr. Jackson, partly by myself.

CASE 3. *Injury to the upper part of the spinal cord: paralysis and hyperæsthesia, with diminution of the muscular sense, in the left limbs; anæsthesia to touch, tickling, heat and cold, and painful impressions, with conservation of the muscular sense of voluntary movements.*—T. R—— was admitted, under my care, into the Hospital for the Paralysed and Epileptic, in 1862. On the 8th of April, 1841, being slightly intoxicated, he fell backwards in ascending a staircase, and received a blow on the lower part of the neck and beginning of the dorsal region. He lost consciousness for one or two minutes, and remained for some time unable to speak, although his clearness of mind had returned. There was no facial paralysis, and nothing wrong in the head and the senses. In an hour he was not only able to speak, but strong enough to halloo out. As he had lost the power of movement in the left side, and was laid on the right, he could not move at all, although this last half of the body was only partially paralysed (the inferior limb much more than the upper one). After he was turned he found that he could not move his head. The sphincter of the bladder and the rectum were paralysed, his urine and fæces escaping involuntarily. In a week or two, however, voluntary movement returned in the right side; but the weakness of the neck lasted several months, during which he had to support his head with his right hand. He was sent to St. Thomas's Hospital, where he was cupped in the back of the head. From that time he could hold his head up, and he gradually improved in other respects.

When I saw him in the Hospital for the Paralysed and Epileptic, twenty-one years after the accident, the following symptoms were observed:—

1st. On the right side voluntary movement was normal, but the right upper limb had recently become thinner. He was perfectly able to direct the movements of both limbs on that side. For instance, he could easily (whether his eyes were open or closed) touch, with one of his fingers, either the top of his head or the tip of his nose. He could place his foot at the precise spot he wished; and he could also, while lying down, his eyes closed, point out with the big toe what part was touched on the other (left) foot. On the left side, which at first had been completely paralysed he had recovered power enough to walk (but dragging the leg), and to squeeze (but very little) with his hand. The upper limb, however, could make all the ordinary movements, but none completely and each of them with slowness, weakness, and clumsiness. When he walked, the inferior limb on that side (the left) did not present that peculiar circumduction which is so common in cases of cerebral hemiplegia: the point of the foot glided over the ground, going almost straight forward.

2nd. Tactile sensibility was notably increased in the left side. He felt the two points at a distance of seven-tenths of an inch on the dorsum of the foot, of eight- to nine-tenths on the sole, of less than two inches on the leg, of two and two-tenths inches on the thigh, and of one inch on the trunk. In the right side, on the contrary, tactile sensibility was considerably diminished in some parts, and completely lost in almost the whole extent of the trunk and of the lower limb. The sole of the foot, however, still had a slight degree of tactile sensibility, but when he did feel the application of the æsthesiometer he only had the sensation of one point, even when the points were at a distance of three inches one from the other. Only one point was felt when the two were four and a half inches apart, on the back, near the inferior extremity of the right shoulder, while he felt the two points at a distance of two and one-tenth inches on the corresponding part of the left side. Tactile sensibility was also notably diminished in the right hand, where the fingers, however, had feeling enough to allow his employing them to button his shirt. The other (the left) hand had an increased tactile sensibility.

3rd. The feeling of tickling gave very acute sensations on the left side, but was so completely blunted on the right that it occurred very often that he did not feel at all the feathery part of a quill passed over the skin.

4th. Sensibility to heat and cold is increased in the left side and lost in the right. He had a general rigor when ice was applied on the left side, while he had no other sensation but a kind of tickling when it was applied to the right side. He could not bear the immersion of the left foot into cold or hot water on account of the terrible pain (as he called it) he then felt.

5th. The sensibility to painful impression was very much increased in the limbs and trunk on the left side, where pinching was felt more acutely than in health, and where even a moderate pressure on the fingers caused pain. On the right side the trunk and limbs had almost entirely lost the sensibility to painful impressions.

6th. On the left side, the knowledge of the place where an impression of any kind was made was perfectly accurate. It was almost so in the right half of the body, when a touch, a tickling, a pressure, gave him a sensation.

7th. His sight with the left eye was not so good as it had been; but his pupils were of equal dimensions. For some time after the accident his sight and hearing on the right side had been slightly affected.

8th. He at times had, in the right half of the body, a purely referred or subjective sensation of excessive heat, which usually appeared first at the hip and thence went down to the leg, and afterwards ascended to the shoulder of the upper limb. This feeling of burning heat came on by attacks, which began to occur a week or two after his fall. They were rather frequent for nearly a year, after which he was free from them for a long while; but lately they have returned, and have again become somewhat frequent. The morbid feeling of heat he had in these attacks was not accompanied by a real increase of temperature in the right side of the body; on the contrary, that side was generally colder than the other. The temperature of the two limbs was once taken by Dr. J. Hughlings Jackson, who found that the right popliteal region was at 97·1°, while the left was at 97·2°.

9th. The patient was attacked with a convulsive affection, consisting in cramps entirely confined to the left side of the body. These cramps used to begin in the muscles of the big toe, and to extend thence to other muscles of the lower limb, and sometimes to the whole left side.

10th. Notwithstanding his advanced age (sixty-one years old in 1862), he enjoyed pretty good health. When he accidentally cut himself, the healing process took place as well on the right as on the left side. He is usually constipated, and is compelled to empty his bladder quickly when he feels the need of it, to prevent an involuntary discharge. Since his fall the sexual power has remained weak.

11th. He asserted that he never had difficulty of breathing, and, when I saw him for the first time, the respiratory movements were accomplished as well on one side as on the other.

This case, which is extremely obscure as regards what took place at the time of the accident,* is, however, clear enough for my purpose in this lecture, which is to establish by cases the symptomatic history of spinal hemiplegia. We find in this case the following principal features:—

1st. More complete and more persistent paralysis of motion in the left than in the right limbs.

2nd. Alteration of the muscular sense in the left side, and normal condition of that sense in the right side.

3rd. Increased sensibility to touch, tickling, heat and cold, and painful impressions, in the persistently paralysed side (the left).

4th. Considerable anæsthesia to touch and other kinds of sensitive impressions in the right side.

In this case, the injury to the spinal cord being higher up than in the two preceeding ones, that there was not anæsthesia in both arms, as the sensitive nerves of these limbs make their decussation below the place where the lesion existed in the cord, which was at the level of the third or fourth pairs of nerves. I regret not having examined the sensibility of the neck, where most likely I should have found an anæsthetic zone, similar to that which existed in the two preceding cases, along the upper limit of the increased sensibility.

No appearance existed in this case of the vaso-motor, facial, and ocular symptoms. Their absence may be accounted for partly by the length of time which has allowed a reunion of fibres, partly by the fact we know from experiments on animals, that a transverse section of a lateral half of the spinal cord near the medulla oblongata, although it produces more marked effects on the circulation of the head and face and on the eye, the sensibility, and the muscles of the face than a similar section on the cord near the last cervical or the first dorsal nerve, is not followed like this last injury by so many persistent effects.

The assertion of the patient that he had no difficulty of breathing even in the beginning of his affection may only be due to his not having remembered that his respiration was difficult. Still I can say that experiments on animals show, contrary to the statement of Moritz Schiff, that respiration can continue without any marked disturbance on the side injured after the transverse division of almost the whole lateral half of the spinal cord, including the white lateral column (high up in the cervical region).

In this case the natural duration of life seems to have received no abbreviative influence from the injury to the spinal cord and the consequent paralysis. When I first saw him his general health was still good, although he had been paralysed twenty-one years, and when seen by Dr. Hughlings Jackson in 1865, twenty-four years after his fall, he was still in pretty good health.

Several other facts also deserve mention about this case. 1st. The persistence of anæsthesia, notwithstanding the great amelioration as regards voluntary motion. 2nd. The persistence, also, of hyperæsthesia. 3rd. The peculiar kinds of attacks to which the patient was so long submitted—attacks of subjective sensations of heat in the anæsthetic limbs and of cramps in the paralysed limbs. 4th. The patient had reacquired the peculiar faculty of detecting on what part of the anæsthetic side were made the few impressions that he felt, notwithstanding the very slight degree of feeling.

(To be Concluded.)

Lectures

ON

ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By BERNARD E. BRODHURST, F.R.C.S.,

Lecturer on Orthopædic Surgery at the Hospital.

LECTURE II.

ON RICKETS.

HAVING spoken of the causes of congenital and non-congenital deformities, I will proceed to consider in detail the various affections to which allusion has already been made; and I will commence with the subject of Rickets.

---

* It is not at all probable that there was a fracture, and still less a dislocation, of the spine at the place where, according to the symptoms, the spinal cord was injured—i. e., about the second or third cervical vertebra. It is more probable that there was a concussion of the spinal cord, and a hæmorrhage in a limited part of the left half of that organ, near the origin of the third or fourth cervical pairs of nerves. The part of the spine, however, which was struck when the patient fell was much lower. When I saw him, I found that there was a hard and large swelling between the spine and the left shoulder-blade, without any other spinal deviation than, perhaps, an extremely slight concavity on the left side, formed by the line of the spinous processes of the last two cervical and the first two dorsal vertebræ.

Rickets is essentially a disease of infancy. It occurs not uncommonly at birth; but it is observed especially during the first and second years of life. This disease was not described until the middle of the seventeenth century, when David Whistler selected the subject for his inaugural thesis, in 1645; and Glisson, in 1651, made of it an elaborate study. At that time, as now, the affection was known by the name of rickets. It is probable that this term was formed either from the ancient French word *riquet* or from the German *rücken*.

Rickets is developed as a consequence of malnutrition. Hence it is that the disease is seldom seen whilst the child is being suckled at its mother's breast—that is to say, whilst it is kept warm and is well and sufficiently fed; but as soon as the food is insufficient or unsuitable, and the child is exposed to cold, then assimilation of food becomes imperfect, diarrhœa is frequent, the abdomen becomes tumid and night-sweats are observed, the child becomes weak and irritable, the muscles lose their consistence, and the skin acquires unusual sensitiveness. Then also commence to be seen swellings of the extremities of the long bones and those further changes in the various textures of the body combined with deformities of the skeleton which together constitute rickets. Thus, rickets is comparatively rarely developed until about the sixth month of infantile life. From this time until the end of the second year more especially, those changes commence to take place through which are produced the deformities to which I shall ask your attention.

Rickets is a general disease in which every tissue is more or less involved; but the osseous system is more affected, or appears to be more affected, than any other tissue, in consequence of the deformities which are produced through the softening of the bones. Dr. Little has well expressed it thus:—"Rachitis is not solely a disease of the osseous system, but its effects are in this part more obvious, and therefore have been longer noticed. My own opinion is," continues Dr. Little, "that every tissue of the frame is involved in the loss of tone and firmness—the bones, ligaments, the involuntary and voluntary muscles and their appendages, the membranes, and the glandular organs." And Sir William Jenner, in his admirable lectures says: "In some books rickets is classed among diseases of the bones. This is a mistake. Rickets is no more a disease of the bones than is typhoid fever a disease of the intestines."

Again, Sir William Jenner says: "Rickets being a general disease, the bones are affected as one organ, just as the arterial system is in the degeneration of age; the consequence of this is that no one bone is ever affected without all suffering, and that whether the disease manifest itself chiefly by enlargement of the ends of the bones, or by softening of the bones, or by both in a proportionate degree." However well this opinion may satisfy the pathologist, it must be admitted that certain portions of the bony system appear to be affected sooner, and others later. Thus, the enlargement of the wrist, which is always observed in rickets, is visible before any other affection of the bones is apparent. Disease, having commenced, will doubtless proceed to involve very tissue of the frame, if the conditions remain unfavorable to nutrition; but it is well known that disease may be arrested, and that no further result shall appear than this swelling of the carpal extremity of the radius. Such being the case, it can scarcely be said that the bones are affected as one organ.

This swelling of the epiphyses of the radius and ulna may be considered to be characteristic of rickets. The malleoli and the knees also become swollen, though not so constantly as the wrist. I have never seen a case of rickets, however slight, in which the carpal extremity of the radius was not swollen. The bones throughout the skeleton become painful, and some of them are curved. Deformity takes place usually in the following order—namely, the tibia and fibula; the femur, the thorax, the clavicle, the spine, the radius and the ulna, the humerus, the pelvis, and lastly the head and face. Guérin supposed that rickety deformity advances from below upwards; that the leg bones and the tarsal bones first show symptoms of disease, then the thigh bones, and afterwards the pelvis and the spine; that, indeed, a rickety spine involves rickety deformity of the pelvis, thigh, leg, and tarsal bones.

As a rule, doubtless, the leg and thigh bones become curved sooner than the arm bones, in consequence of the weight of the body being thrown on to them, whilst the arm bones are free. But this depends on the mode of progression. In the commencement of the disease the child may perhaps walk; he will then bend the tibia and fibula, and should he continue to walk, probably also the femur will yield. Then is produced what is termed genu extrorsum. But the disease may be developed before the child has begun to walk, which indeed is exceedingly common. Then he will push himself along, while sitting, with one or other foot; and in this way will bend the tibia more or less sharply above the malleolus, and perhaps the radius and ulna above the wrist. Lately I showed you a child in whom one humerus and both femurs were much curved while the leg and arm bones remained straight. It was sufficient to see this child move about the floor to understand how this deformity was produced: the child never walked, and never had walked, but crawled about the room on its knees and supported itself on the left elbow. Hence it was that the femurs and the left humerus were the only bones which were curved. And thus it is that the leg and thigh bones are seen to be curved more frequently than other parts of the skeleton—because they have to bear the weight of the body. It frequently happens that after the leg and thigh bones have become somewhat curved they also become painful. Partly from this cause, and also from a sense of weakness, the child refuses to walk, and crawls about upon his knees and elbows or hands, and thus produces curves of the arms and forearms in addition to those of the lower extremities, as has been already explained.

The short bones become thickened in this affection, and, among others, the tarsal bones; the ligaments also are softened, and allow the arch of the foot to drop. Thus the weight is transmitted especially to the inner edge of the foot. And for the same reason, the internal lateral ligament of knee-joint has to bear a very unusual amount of downward pressure, and it in consequence yields. A very common affection, knock-knee, is thus produced.

In rickets the entire organism is more or less affected: growth is arrested and development is impeded. But it is more especially with the bony structures that we are at present concerned, and in these the most striking lesions are the enlargements of the epiphyses of the long bones, the thickening of the flat and the short bones, the softening and painful condition of the affected bones, and the deformities which result from mechanical causes.

Among the pathological changes which take place in the course of this affection are increased development of the spongy tissue of the epiphyses and of that portion of the cartilage in which calcareous matter is first deposited. Also the periosteum becomes thickened and vascular throughout the entire length of the bone, and especially at the extremities of the long bones—at the junction, namely, of the cartilage with the bone. The medullary membrane becomes highly vascular, and sanguinolent fluid occupies the medullary canal, the cancelli, and especially the epiphyses. The cells become distended, and are at length broken down, and the medullary cavities become chambers filled with bloody, pulpy matter, which will flow on cutting into the bone. The bones themselves become soft through diminution of their earthy salts, so that they readily bend, or even they may be cut with a knife. The salts of lime are taken up from originally well-constituted bones, and pass out of the system, especially in the urine. The bones, especially the shafts of the long bones, are rendered extremely sensitive, so that pressure cannot be borne. In some rare instances the progress of the disease is so rapid that all the bones may become softened in the course of some few weeks.

This is the condition of the bones, then, in rickets; and out of this condition arise the deformities to which I have to ask your attention—namely, flat-foot, bow-leg, and knock-knee, as well as curvatures of the arm, forearm, and spine. But it must not be supposed that every case of flat foot, bow-leg, and knock-knee results from rickets; for similar forms of deformity are produced by general and local weakness and inability to sustain the weight of the body. In these, however, the characteristic mark of rickets—swelling of the epiphyses of the long bones—is absent.

When a bone is curved, it is so in consequence of its softened condition: it yields to the superincumbent weight. Thus the tibia and fibula become curved outward. This curve is an exaggeration of the normal curve as it is found in the young child. All rachitic children are long in learning to walk, and instead of walking they push themselves along the floor in various ways, and thus each determines the form of curve peculiar to itself. For instance, one will use the outer side of the foot and leg, and curve the leg bones sharply above the outer malleolus; another moves about upon the knees, and curves the femur outwards; whilst again another will rest on the elbow and work itself along with the hand, and thus bend the humerus, and also the radius and ulna immediately above the wrist. These curves of the lower limbs are always considerably increased when the child stands. Then is produced, in addition perhaps to curvature of the femur, outward curvature of the tibia—genu extrorsum. Together with this weakness of the bones there is commonly associated corresponding weakness of the ligaments. The internal lateral ligament of the knee-joint. Thus there will be found knock-knee on one side, and bow-leg, or genu extrorsum, on the other; or, on the other hand, the same kind of deformity may be developed in both extremities; and this is indeed generally the case, while the former is the exception. The leg bones are somewhat similarly bent in each limb; or the thigh bones are bent; or the thigh bones and leg bones are together bent; or the knees are bent inwards.

When knock-knee exists, the weight of the body is transmitted more and more towards the inner edge of the foot, so that at length, the ligaments in the sole of the foot yield, and the arch of the foot sinks, until little or no arch remains. But it is, also, very common to find that in weak or rickety children the arch of the foot yields first and the knee later. The scaphoid and the cuneiform bones sink so as to lie upon the ground, and the consequent pressure of the soft structures in walking is painful, and causes an awkward and peculiar gait; the elasticity of the foot is destroyed, and its movements become much restricted; the abductors of the foot become retracted, and the foot is everted. Soon the ligaments of the ankle-joint yield, and there is often a greater sense of weakness about the ankle-joint even than in the foot itself. Now, also, the internal lateral ligament of the knee begins to yield, and the knee becomes inclined inwards somewhat in proportion to the deformity which has been produced in the corresponding foot; thus one knee may be more inverted than the other. But when this happens the pelvis becomes oblique, and curvature of the spine necessarily follows.

The *treatment* of rickets consists in the employment of all such measures as conduce to the restoration of health—namely, warm clothing, such as flannel next to the skin and enveloping the trunk and extremities; a diet composed mainly of animal substances, and a dry and pure air. To these may be added, tepid bathing, as well as cod-liver oil and one or other of the various preparations of iron. Constipation and diarrhœa, which are so frequently present in this affection, are to be met, not by the exhibition of drugs, but by a careful regimen. It is rare, indeed, that strict attention to diet will not, at least in the commencement of rickets, be sufficient in itself to regulate the secretions, and restore a state of healthy nutrition; but should it not be sufficient to effect this purpose, then recourse may be had to the nitro-muriatic acid bath, which, when used occasionally, and as it may seem to be required, is of great value in these affections. We are mainly indebted to Sir Ranald Martin for the introduction of this remedy into this country, and I bear willing testimony to its excellence and vast superiority to purgatives and alteratives and the preparations of mercury with which these conditions essential to rickets are yet treated by some.

The *surgical treatment* of the deformities which are above described—namely, curvatures of the tibia and femur, and knock-knee—may be explained in very few words. It consists of the application of splints or supports to the bent limbs. These are placed on the inner side of the curve, and pressure, by means of webbing bands, is thus readily applied to the outer side of the curve. In genu extrorsum, or outward inclina tion of the knee, the femur is curved outwardly as well as the tibia. In this deformity, therefore, the support should reach on the inner side of the curve to within two inches of the pubic bone. It should be made of metal, and as light as is compatible with the requisite strength, with a joint to correspond to the knee-joint, and its lower end should be inserted into a socket, which is let into the sole of the boot. Where the bones of the leg alone are curved the support should reach from the inner condyle of the femur to be let into the sole of the boot, as in the case before-mentioned. In both cases a pad should be so placed as to correspond to the internal malleolus, so that pressure may not cause injury to the integument. It is easy in this manner to remove this outward curve of the leg-bones. But together with an outward curve there is not unfrequently found a forward curve also, and it is much more difficult to remove this anterior curve than it was to act on the outward curve. This anterior curve should be treated by means of a well-padded splint, and pressure should be made gradually, and increased very slowly; for in this position, the bone being sharp, and lying immediately beneath the skin, pressure would readily cause a slough. To act on such a curve efficiently, pressure should be exerted only in the horizontal position, and the child should not be allowed to stand until the curve be removed. The same system is to be adopted in the application of splints to the humerus and the radius and ulna. In all these cases the apparatus should be provided with joints which correspond to the articulations of the limb, and which allow, consequently, of motion at the same time that such pressure as is necessary is applied to the curved bone. It is, of course, to be understood that this treatment, when applied to rickety bones, is to be used before Nature's cure is effected; for as diarrhœa ceases together with night-sweats, and the functions of digestion are performed in a more healthy manner than heretofore, the epiphyses begin to diminish in size, and the salts of lime then are again deposited in the bones, so that they not only acquire their normal strength, but become endowed with much greater solidity and consistence than in their normal condition. The phosphate of lime then is deposited in abundance, especially on the inner side of the curve, and this deposition greatly increases the weight and strength of the bone. This is the cure which Nature performs. When this has been effected, the curves which existed remain unalterable. These observations apply, however, alone to rickety bones, and not to those curves which are induced in the long bones as a result of debility.

Genu valgum, or knock-knee, requires support on the outer side of the limb. This support is, perhaps, best given by means of a metal stem, which is fitted above into a band which encircles the pelvis, and below into the sole of the boot; joints correspond to the articulations of the limb, and one or more bands support the knee. In severe cases it is advantageous to attach a cog-wheel to such an instrument, that the direction of the stem may be altered as the limb yields. In cases where such an apparatus is necessary, the child should be kept in the horizontal posture during almost the whole day. Exercise may be allowed; but it should be used sparingly. In a severe case in the adult—such a case as that of James S——, in Fitzwilliam ward—it is necessary to divide the outer hamstring. In this instance, and it is, perhaps, one of the most severe cases that you will ever see, the outer hamstring in each leg was divided; the patient was confined to bed during four months, and with the use of instruments his limbs were then brought into a normally straight condition. Before he left the hospital he walked well. The cog-wheel at the knee was subsequently removed, and a free joint was substituted for it; and, wearing such supports, the patient need not fear any recurrence of deformity.

The mode of division of the biceps tendon is as follows:—The patient, lying on his face, will endeavor slightly to bend the knee, which will cause the muscle to spring into action, and make the tendon tense. The tenotome will then be introduced beneath the tendon from the centre towards the outer side of the limb, and, being guided close to the tendon, it will pass between it and the peroneal nerve. The edge of the knife will then be directed upwards towards the tendon. So soon as the tendon is divided, the peroneal nerve becomes prominent, and a tyro may even doubt whether the tendon has really been divided. If care has been taken to pass the knife fairly and fully beneath the biceps tendon, on using a cutting motion the tendon will certainly be divided, and the knife may be felt covered only by the integument. The knife should then be withdrawn, and on no account should it be reintroduced. The temptation has sometimes been felt to be so strong that the knife has been reintroduced, and the nerve divided. Paralysis has, of course, followed. The puncture should be carefully closed, and the limb bandaged; and in the course of three or four days, when the wound has healed, extension may commence.

LECTURE III.

ON CONTRACTIONS OF THE LIMBS.

CONTRACTIONS of limbs may be general, as is seen in spastic rigidity from spinal irritation; or a limb or a portion of a limb only may be affected, through injury to the nervous system, or from local injury, or as a result of inflammation. Thus, spasmodic contraction may affect an upper or a lower extremity, or a hand or a foot only, or the entire muscular system may be involved. The muscles which are most frequently affected in this manner are the flexors and the adductors of the thighs, the flexors of the legs, the extensors and the adductors of the feet, the flexors of the arm, and the flexors of the wrist. But, besides these, a spastic condition of the muscles of the head and trunk, those of the orbit and of the organs of speech and deglutition, occasioning wry-neck and every form of spinal curvature, squinting, stuttering, and difficulty in swallowing, is also met with, following those lesions to which allusion has already been made. Again, paralysis gives rise to distortions which bear in outward form a close resemblance to those which have been occasioned by spasm. For, as in spasm the flexors, adductors, and pronators of the *limbs* are more especially affected, so in paralysis the opposed sets of muscles become more especially implicated—namely, the extensors, abductors, and supinators. And thus the wrist may, for instance, be flexed through spastic rigidity of the flexor muscles, or it may equally be flexed through paralysis of the extensor muscles and consequent contraction of their opponents. And in the same manner the foot may be affected with talipes varus through spasm of the gastrocnemius and the adductors, or it may equally be distorted into talipes varus through paralysis of the muscles on the front of the leg and the abductors, and the consequent retraction of their opponents. These morbid states then—paralysis and spasm—are induced by irritation or by organic change in the nervous centres. The lesion may be congestion only, or effusion and softening may result.

But local inflammation is, perhaps, even a more common cause of contraction of limbs than nervous lesion. Inflammation of and around joints, whether it be in the form of rheumatism, or scrofula, or phlegmonous erysipelas, or from mechanical injuries, gives rise to contraction of the limb, with more or less immobility.

I will now proceed to consider various contractions of the limbs, and afterwards direct attention to the treatment of these results of spasm, paralysis, and inflammation, as they are brought before us in the deformities with which we have to deal. And because club-foot is of very frequent occurrence, and in the treatment of this deformity that of all other deformities may be said to be comprised, I will commence my descriptions of contractions of the limbs with the description of talipes, or club-foot.

ON TALIPES, OR CLUB-FOOT.

Talipes occurs especially in four principal forms, or varieties, which are distinguished by the terms equinus, varus, valgus, and calcaneus. The word talipes is used as a generic term, and comprehends all those deformities of the feet which result from muscular and other contractions. But besides these specific forms, where the foot is directed downwards, inwards, outwards, or upwards, compound varieties, or intermediate forms, are met with, such as equino-varus, equino-valgus, calcanes-varus, and calcaneo-valgus. Each of these varieties of talipes may be either of congenital or non-congenital origin; and each form may depend on any one of the several causes already mentioned, such as spasm, paralysis, inflammation, &c.

Talipes equinus is more frequently met with than any other variety of talipes: it is essentially a non-congenital deformity; but also it occurs, though rarely, as a congenital affection. I have an opportunity of showing you such a case: the child is a patient of Mr. Lattey's.

Talipes equinus consists in the elevation of the heel through morbid contraction of the muscles of the calf of the leg, the foot being neither inverted nor everted. Where this distortion occurs as a congenital affection, the other foot may also be distorted; and probably the hands may be also affected. Thus, in one instance which came under my care, there was talipes varus of one foot and talipes equinus of the other, as well as club-hands. In the case to which I have alluded above (Mr. Lattey's) talipes equinus was the only deformity which appeared; this was, however, so remarkable that I may bestow some few words upon it.

The child was well formed with the exception of the right foot. On this foot were eight toes. It was a large, broad foot, fully extended, and nearly half as broad again as the other foot. A slight sulcus separated the heel into two equal parts, making two small heels. The most singular circumstance, however, connected with this deformity was that two Achilles tendons were inserted into this conjoint heel, and that both were large, well-developed tendons. The tendons were placed so far apart that it was necessary to introduce the knife a second time to divide the two tendons. The accompanying woodcuts (Figs. 2 and 3) show the two aspects of the limb: one passive and the foot extended, while the other shows the muscles of the calf of the leg in action, and the toes bent towards the sole of the foot.

FIG. 2.

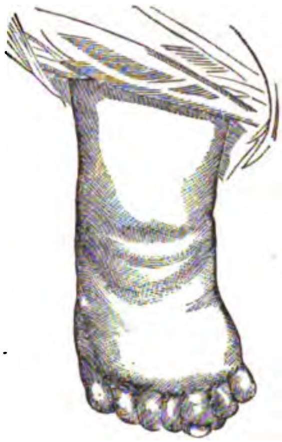


FIG. 3.

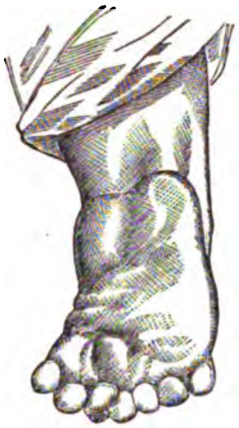
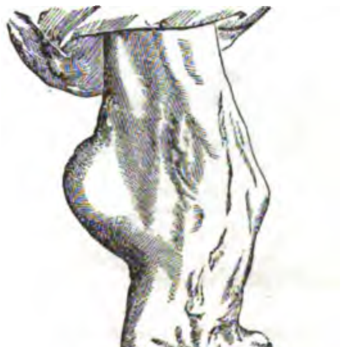


FIG. 4.

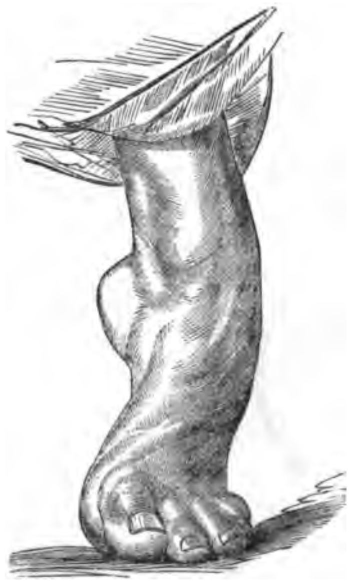


In talipes equinus the extremities of the metatarsal bones and the toes rest on the ground and support the weight of the body; and thus they become slightly separated one from another, and the breadth of the anterior portion of the foot is increased. (See Fig. 4.) When there is considerable loss of power in the muscles on the anterior surface of the leg, the foot may be retroverted and even the entire dorsum of the foot may rest on the ground. When the muscles in the front of the leg are affected with spasm, the toes are drawn upwards and backwards.

There is still another form of distortion, with very little deformity, however, which is notwithstanding occasionally, to say the least, extremely inconvenient, and which is known as rectangular contraction. In this condition, the foot cannot be raised beyond a right angle, and the anterior part of the sole is pressed too forcibly against the ground in walking, so that it is rendered tender and painful, and at length a callosity forms which induces lameness. There is a case illustrative of this rectangular contraction at this time in Harris's ward. In this instance, not only was there a large callosity on the anterior portion of the sole of each foot, but the patient was admitted with inflammation of the sole and the callosity in each foot in a sloughing condition. The callosities have already almost sloughed out, but their removal alone, and without the section of the Achilles tendons, will not add much to the patient's comfort.

When any lateral deviation of the foot is superadded to elevation of the heel, then other muscles than those of the calf of the leg are called into action, such as the adductors or the abductors of the foot. Then we have a compound distortion produced, whether equino-varus or equino-valgus; and the special form of distortion is determined by the relative power of one or other set of muscles, or perhaps it is determined by the mode of transmission of the superincumbent weight, or by some other such cause. Fig. 5 represents equino-varus.

Fig. 5



The *treatment of talipes equinus* consists in the restoration of the shape of the foot by the division of the tendo Achillis, and the subsequent gradual extension of the new material which is deposited between the divided ends of the tendon, until the foot can be well and sufficiently flexed upon the leg. Occasionally, however, the limb may be restored to its normal position, and distortion may be efficiently removed by mechanical means alone and without the use of the knife. This is especially the case where the distortion results either from paralysis or spasm, and especially where it is slight only. Where the distortion is severe, the tendo Achillis must be divided.

The tendo Achillis is usually divided from an inch to an inch and a half above its insertion. The tenotome should be passed beneath the tendon from the outer to the inner side of the foot; and the edge of the knife being then turned upwards towards the tendon, and the tendon at the same time being made tense, the knife will be drawn across the tendon, making a clean transverse cut. Care must be taken not to draw the knife through the skin covering the tendon. If the limb be so held that the tendon is left lax, it may be difficult to divide the tendon; but if, on the other hand, too much force be used the divided ends of the tendon will be drawn asunder forcibly, and the integument will be drawn on to the operator's knife; it will then require some skill to avoid dividing the covering skin.

Scarpa's shoe is the instrument ordinarily used in the treatment of this deformity. It may be applied so soon as the puncture has healed, on the fourth day namely; and extension may be carried on slowly and gradually until its completion in six weeks. Should extension not be sufficiently rapid, at the end of six weeks distortion will only be in part removed; but, on the other hand, should extension be made too rapidly or forcibly, the uniting medium may be drawn out so as to destroy the power of the gastronemius, and calcaneus will then result.

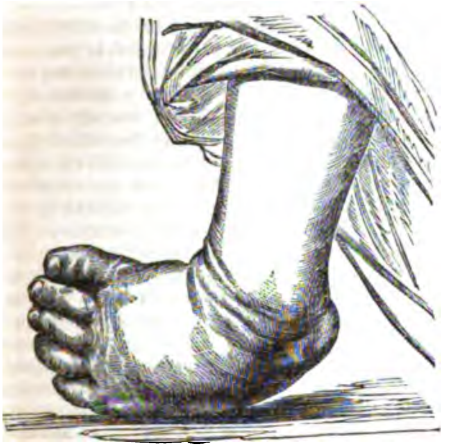
The restoration of function is scarcely less important than the restoration of position in cases of deformity which come under treatment. No greater mistake can be made than to suppose that all that is required of the surgeon is to remove an inconvenient or ugly position of a limb. Until he has restored some degree of power to use the limb as Nature intended, he has conferred but a small benefit by the restoration of position. Galvanism, shampooing, and baths, as they may seem necessary, are to be recommended in these and similar cases of deformity, and their use is to be continued until such power is restored as can be regained.

ON CONTRACTIONS OF THE LIMBS.

Talipes varus.—It has already been stated that varus, as every other form of talipes, occurs both as a congenital and a non-congenital affection; but as it was shown that equinus is essentially a non-congenital distortion, so it must be now said that varus is especially that form of talipes which is most commonly met with at birth. In congenital varus one foot or both may be distorted: it is, however, somewhat more usual to find both feet affected rather than one only. Where only one foot is distorted, the right appears to suffer twice as often as the left, and the male child is affected with congenital talipes three times more frequently than the female. In a report which was lately made to the French Government it was stated that nearly 13,000 cases of talipes existed in France. It is probable that in this country the number of cases from every cause is relatively larger even than in France.

In talipes varus the foot undergoes a threefold alteration in its position in relation to the leg, as was first clearly pointed out by Dr. Little—namely, extension, rotation, adduction. The essential external character of varus, however, is, as its name implies, inversion of the foot; and this may exist, though it is rare, without extension or rotation. In congenital varus, as it is ordinarily seen (Fig. 6), the heel is raised (extension), the toes are directed inwards (inversion), and the inner margin of the foot is raised (rotation).

FIG. 6.

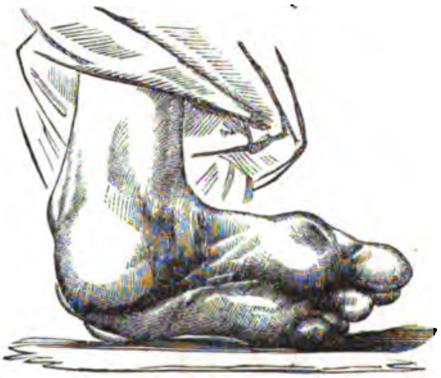


But although this, as it is now described, may be looked upon as the type of talipes varus, several degrees of distortion occur, which are described in treatises on the subject as grades. Thus, there may be retraction of the tibialis anticus muscle alone, producing slight inversion of the anterior portion of the foot; and to this may be added contraction of the plantar fascia, through which the length of the foot is diminished. Or again, the inner edge of the foot is raised, the toes are inverted, and the heel is elevated. This grade of distortion depends on retraction of the gastrocnemius and the tibialis anticus and posticus muscles. The third grade is that which has been already described as the ordinary form of congenital varus; and the fourth grade is the most exaggerated distortion, where, perhaps, the inner margin of the foot lies in contact with the inner side of the leg, and the toes present directly upwards, or are bent backwards; the heel is drawn up, and the dorsum of the foot is directed downwards and forwards. The tendo-Achillis appears to be deflected from its ordinary position, and lies, in some of these instances of severe distortion, immediately over the posterior tibial vessels; the plantar fascia is shortened, and the muscles in the sole of the foot, as well as the extensors and adductors of the foot and the flexors of the toes, are rigidly contracted. The muscles, then, which are principally concerned in producing this affection are those of the calf of the leg and the tibial muscles; while, on the other hand, the extensor longus digitorum and the peronei become weak and attenuated.

In a severe case of talipes varus some rotation of the tarsal bones is found to exist at birth; this is easily overcome, however, and the foot is restored to its normal shape by careful and gentle treatment. Together with excessive distortion some malformation of the tarsal bones may be found, which may offer serious and even insuperable impediments to the complete removal of distortion. These, however, are rare and exceptional cases, and I only allude to them since you ought to know that they exist.

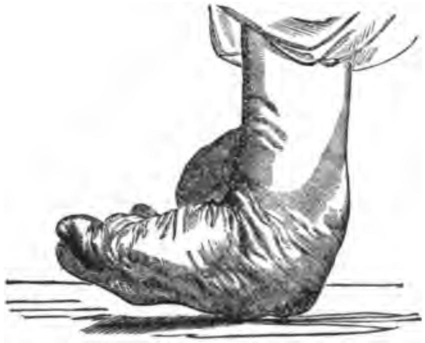
When the foot begins to bear the weight of the body important changes take place, which should be thoroughly understood. The superincumbent weight is transmitted, not through the arch of the foot, as in the normal position of the limb, but it is received on the outer margin of the foot. The metatarsal bones, from want of adequate support, become folded or doubled into the sole of the foot, and thus a broader surface is gained for support; and a soft cushion, composed of fat and cellular tissue, is developed, which enables the weight to be more readily borne, and, indeed, it is often so large and perfect that it forms an excellent rest, and enables the body to be borne almost as easily as in the normal position of the foot. This cushion is therefore of great importance to anyone afflicted with varus. In non-congenital varus this cushion, or pad, is never well developed, and, in consequence, walking is always more or less painful. Both in congenital and non-congenital varus this cushion inflames readily through over-walking or through exposure to cold and it will then probably slough. It disappears entirely after the inversion of the foot has been removed, when the sole instead of the outer margin of the foot, is placed in contact with the ground; its function has then ceased, and it, in consequence, ceases to exist. Not only may the fifth metatarsal bone be doubled into the sole, but the fourth also becomes folded in with it, so that at length the weight is no longer transmitted to the outer margin, but to the dorsum of the foot. (These changes are shown in Fig. 7.) And, indeed, rotation of the foot may be so complete that the astragalus has mainly to bear the weight of the body in walking, as is shown in Fig. 8.

FIG. 7.



In the adult, every structure entering into the formation of the limb may undergo degeneration. The bones of the leg and foot become light and their walls become thin, and the tarsal bones are somewhat altered in form, especially the astragalus and the cuboid bone; the muscles also become atrophied through inaction, and after the restoration of the limb to its normal form they remain small, but their functions are restored. If, however, motion be not restored as well as the normal position of the limb, fatty degeneration of the muscles ensues. For further particulars on this part of the subject, however, I must refer you to the "Transactions of the Pathological Society," vol. x., p. 279, where you will find a minute description of an old-standing case (fifty years) of equino-varus, which was sent up to me by Mr. Hester, of Oxford, and which dissection is now in the museum of the College of Surgeons (No. 9, B). These changes in the structures occur more readily and earlier in non-congenital than in congenital varus. Indeed, in non-congenital varus or equino-varus of forty years' standing, muscular degeneration will probably be found already far advanced and at fifty, as in the case to which I have just referred, there may remain scarcely a trace of muscular fibre.

FIG. 8.



Non-congenital talipes varus may readily be distinguished from congenital varus; for there is present either a condition of spasm or, on the other hand, paralysis; or, again, the distortion may have been induced by loss of substance, such as is occasioned by a burn, or, as in the case which I now show you, by a lacerated wound. There may therefore be either more or less rigidity than is found in congenital varus, or there may be cicatrices. The general outline is less regular, the temperature is ill-maintained, and the limb is in consequence liable to inflame and ulcerate; yet as would be supposed, the outward appearance of the distortion is not dissimilar to the congenital form. It is always a painful distortion for the callosity on which the superincumbent weight is borne is ill-developed, and, through pressure or cold, this pad is liable to slough. Such limbs are occasionally amputated, in consequence of the troublesome sores which are not unfrequently produced.

The *treatment of varus* should commence within some few weeks of birth. Nothing is gained by delaying the operation; but, on the contrary, through delay more time is required to produce an equally successful result. From one to two months after birth is the time which should be selected for the operation.

In very slight cases the distortion may be removed by bandaging and movements of the limb; such treatment is long, however, and often it is unsatisfactory. In an ordinary case of varus the distortion cannot be removed by such means. With regard to mechanical treatment, Phillips says: "In the first degree of varus in infants, the foot may be restored without the division of tendons, and through the use of an instrument for extension only; but such treatment is both difficult of execution and occupies much time, it is often painful, and it is rarely efficacious. In every case, even the most simple, it is better to divide the tendons."

The tendons which require to be divided in talipes varus are those of the tibialis posticus and the tibialis anticus muscles, and the tendo Achillis. And in dividing these tendons it is right to remember that, varus being a compound distortion, its removal must be effected by various stages. Thus, inversion of the foot should first be overcome, after the tendons of the tibial muscles have been divided: the distortion is thus reduced to the condition of equinus. In infantile varus the plantar fascia is seldom contracted, or so much contracted as to require division; but when it has to be divided, it should be done before the section of the tendo Achillis is effected.

In dividing the tendon to be operated on, the knife should first be passed well beneath it; and the cutting edge being then turned towards the tendon, this will be divided transversely on extending the limb. Some operators cut down upon the tendon instead of cutting upwards or towards the surface, believing this to be the simpler method. It is a mistaken notion, however, for not only is the mode which I have indicated easier to perform, but effusion of blood is spared by adopting this mode of division of tendons. If not always entirely bloodless, this operation is for the most part so; but it is difficult to avoid wounding vessels when the knife is used to cut down upon a tendon, and frequently under these circumstances the effusion of blood is not inconsiderable.

To divide the tendon of the tibialis posticus muscle, the tenotome should be passed down to the edge of the tibia, at from three-quarters of an inch to one inch above the malleolus, and the sheath of the tendon be opened freely, without enlarging the external puncture. The rounded knife may then be passed into the wound, and, guided by the edge of the bone, it may be directed beneath the tendon. In the adult, the tendon being prominent and easily felt, the sharp-pointed knife may be slipped beneath the tendon immediately that the sheath has been opened: but in infants it is safer not to use a pointed knife for the division of the tendon.

The anterior tibial tendon should be divided immediately after the posterior tibial has been divided. The knife should be passed beneath the tendon from without inwards as it passes over the ankle-joint, and the puncture should be made close to the tendon, that the artery may not be divided. Occasionally, the anterior tibial is more tensely contracted than the posterior; in which case it should be divided first.

It is of real importance that the tendons now mentioned—namely, the tibial tendons and the tendo Achillis—should be completely divided, so that the restoration of the shape of the foot should proceed without hindrance. Should the tendon be transfixed, and consequently only in part divided, the treatment would be rendered, at least in a large number of cases, nugatory.

The division of the tendo Achillis has already been spoken of; and it is, therefore, unnecessary again to allude to it. Before, however, this tendon is divided, the mechanical treatment of varus must be undertaken.

After a tendon has been divided subcutaneously the puncture is immediately to be closed with a morsel of lint, and the limb, having been bandaged, is to be bound to a well-padded, flexible metallic splint. It is a rule which should always be observed to place the limb, after division of the tendons, in the same position as before the operation; consequently, the splint is to be bent to the angle which the distortion represented, and bound on the inner side of the foot. When the punctures have healed—on the third or fourth day—the splint is to be removed, and one similar in kind, but longer, is to be applied on the outer side of the leg and foot. Even though a slight degree of traction alone be employed, it will be found that in the course of three days the foot will have yielded more, perhaps, than could have been expected from the amount of tension which may have been exerted. On replacing the splint the same effect will be produced, until at length the foot is fully everted.

If, in the infant, it is important, as has been already stated, to deal with talipes varus as a compound distortion, and divide the treatment into stages, it is of much greater moment to attend to this injunction when the patient is older; for, should the Achilles tendon be divided before inversion of the foot is removed, it may be impossible to bring the tarsal bones into their normal positions, and to unfold the longitudinal and transverse arches. It is therefore the rule not to divide the tendo Achillis, whether in infantile or in adult varus, until the foot has been fully everted. Although rotation of the anterior portion of the foot may only be slight, yet the difficulty of removing it, and replacing the bones in their normal positions, would be greatly increased by dividing the tendo Achillis, and thus destroying the fixed position of the os calcis.

There have been numerous cases of talipes varus lately under treatment in the hospital, varying in age from one month to twenty and more years; and you will have observed that in all the treatment has been essentially the same—differing, however, in this, that the difficulty of removing distortion, increasing for the most part as age increases, requires different appliances for its removal. Many of you also have seen a case of cogenital adult varus of forty-eight years, and in which the operation was brought to a successful issue. A straight, well padded splint, carried to the knee on the outer side of the leg, and extending beyond the foot, is sufficient to remove inversion in a large number of instances of varus; but it is obvious that such an instrument is but ill-adapted to its purpose, and in severe deformity it is entirely inefficient. The instrument to be employed in this as in every case of distortion should be constructed in accordance with the mechanical relations of the parts to which it is to be applied, and the centres of motion should correspond as nearly as possible with the centre of motion of the articulation to be acted on. Scarpa's shoe clearly does not fulfil this desideratum. We have, however, in use in the wards of the hospital instruments for the treatment of varus which have lately been brought to a degree of perfection which was formerly unknown. Their action will be much more easily understood by observation in the wards than by description, and therefore I abstain from any description, but invite you to see them as they are applied in the wards.

The plantar fascia, when contracted, should be divided before the support of the Achilles tendon is removed from the os calcis, whether in infantile or in adult varus; otherwise the longitudinal arch of the foot can scarcely be fully expanded. It is rare, however, that the plantar fascia requires to be divided in the infant; yet occasionally the central portion of the fascia may require division, or the inner band of fascia may alone be contracted. In either case the contracted portion should be fully divided. In the adult the plantar fascia offers a serious impediment to the restoration of the shape of the foot, and always requires to be freely divided.

After the deformity has been removed, active and passive exercises of the limb, together with friction, galvanism, bathing, and other like means, must be employed, until easy if not complete power of motion is gained; for if the shape of the foot alone is restored, and the power to move it is overlooked, the patient will walk, but without elasticity and without motion at the ankle-joint. Then, distortion, to a slight extent at least, will recur, and the tendons will again require to be divided. Thus it is that the treatment of talipes varus consists of, in the first place, the removal of the distortion; and secondly, the restoration of the functions of the limb.

Original Papers.

CONCERNING APHASIA.*

By Henry Maudsley, M.D. Lond.,

Physician to the London Hospital; Lecturer on Insanity at St. Mary's Hospital Medical School.

In the remarks which I am about to address to you, my aim is not to contribute any new facts to the clinical history and the pathology of the condition known as aphasia, but to weigh the bearing of the facts already recorded, to examine how far these support the theories that have been based upon them, and to set forth as definitely as may be possible the kind of conclusions warranted by the state of our knowledge. It appears to me that inquiry into this obscure subject has arrived at a stage when little or no further profit can accrue from an aimless accumulation of observations, and that what is now needed is a digestion of the material which lies at hand.

Now the condition of aphasia, or the loss of the power of intelligent expression by speech, must needs for a long time be a very difficult study, forasmuch as the consideration of it brings us at once to that unknown region which lies between what we call mind and what we call matter—to that great barrier which man, having himself first set it up, has been occupied generation after generation in adding to, lamenting all the while that he can find no means of passing it. On the one hand, language is in the most intimate relation with the operations of mind, having, indeed, an essential part in them; on the other hand, it is a mode of physical expression—a muscular act which our senses can observe. Between the thought of the mind and the word which is the sign or utterance of the thought lies that great gulf which no one has yet fathomed or thrown a bridge across. And yet every moment of our lives it is crossed by the ideas travelling outwards for expression, and recrossed by the effects which all muscular acts exert upon the mind. Assuredly there is a direct organic connexion, though we cannot trace it. Our available methods of inquiry are indeed as completely divided as are the subject matters with which they deal: the objective or physiological method of direct observation is concerned with the clinical phenomena of aphasia and the pathological appearances which have been found to accompany it; the subjective or psychological method of introspection is applicable only to the observation of the mental processes, and to the part which words or names have in them. Now it seems to me that conclusions respecting aphasia have been drawn almost entirely from pathological observation, without regard to the important bearing which language in its physiological and intellectual aspect has on the question to be resolved. Had the subjective method been properly used, and the psychological relations of language duly considered, it may be questioned whether the theory that a part of the third left frontal convolution was the seat of articulate language would ever have been promulgated so hastily, and, I may add, received so rashly. To my mind, there has been nothing like it in psychology since Descartes located the soul in the pineal gland.

---

* Read before the Medical Society of London, Nov. 9th, 1868.

Without further preamble, I propose on this occasion to handle briefly, first, the genesis of the theory; secondly, the character of the evidence by which it is supported—in fact, its worth as tried by the simple principles of the inductive logic; thirdly, the physiology of language, so far as defective knowledge enables us to go; fourthly, the pathology of aphasia under a like limitation; and, lastly, to touch briefly on certain questions of interest relating to the condition of aphasia.

The genesis of the theory.—It is well known that Gall believed the faculty of language to reside in the part of the anterior lobes lying above the orbital plates; and, after him, Bouillaud strongly supported the theory of its location in the frontal lobes. Subsequently, M. Dax, of Montpellier, placed the lesion which abolished speech exclusively in the left brain; basing his opinion on 140 observations of cases of aphasic hemiplegia in which the hemiplegia was always on the right side. His son went still further, and limited the seat of the faculty of speech to that portion of the left hemisphere which borders the fissure of Sylvius. It is plain that theories concerning the location of language in the frontal lobe, and in the left side of the brain, were floating in the air. What was likely to happen? That some one in whose mind these theories were fermenting should make an observation or two for the purpose of testing them; and, having found a particular morbid lesion accordant with them, should incontinently jump to the conclusion, not only that the theories were well founded, but that he had discovered the exact seat of the language-faculty. This was exactly what happened. M. Broca, of Paris, examined the brains of two patients who had suffered from aphasia; found, in the one, destruction of the posterior half of the second and third left frontal convolutions, and in the other, destruction of the posterior third of the same convolutions; and concluded, after taking into consideration the symptoms during life, that the posterior part of the third left frontal convolution was the seat of articulate language. Certainly a venturesome conclusion to found on two instances, even if the evidence in them had been of a precise and positive character! But it was far from being decisive. In one of the cases there were, besides the particular lesion selected as the basis of the theory, the following morbid conditions:—Thickening of the cranium and of the dura mater; infiltration everywhere of the pia mater, with yellowish plastic matter of the color of pus; softening of the greater part of the left frontal lobe; a cavity of the size of a hen's egg, filled with serum, and caused by the destruction of the inferior marginal convolution of the tempora-sphenoidal lobe, the canvolutions of the island of Reil, and subjacent part or extra-ventricular nucleus of the corpus striatum; while the weight of the encephalon, after the fluid had drained from it, was 14 oz. less than the average weight of the brain in men of fifty years of age. In the other case, although no other morbid lesions were said to be discoverable than an apoplectic cavity in the posterior third of the second and third left frontal convolutions, and a considerable quantity of serum in the arachnoid cavity, the brain with its membranes weighed only 40 oz., or 9 oz. below the average weight of the brain in adult males. It appears to me that these atrophied brains—the brains of persons who died inmates of a lunatic asylum—afford very indifferent support to the theory which was extracted from them; indeed, it is not easy to see why M. Broca might not, with equal justice, have maintained that a faculty of sanity was located in the third left frontal convolution.

Thus much concerning the genesis of Broca's theory. I need not now enumerate the names of those who have given it their entire or partial adherence; the immediate question being, not as to the number of the witnesses, but as to the nature and value of the evidence which they give. Let us, then, address ourselves briefly to this question.

The nature of the evidence adduced.—The theory may be characterised, in a few words, as found on a crude induction *per enumerationem simplicem*, without due regard to contradictory instances. It is an example of the commonest kind of fallacy in inductive inquiry—the unwarrantable conversion of the lowest sort of generalisation into a casual law. Causation has been confidently inferred from what, so far as evidence goes, may be mere casual conjunction. Consider what the evidence is:—

1st. We have numerous observations recorded proving the more frequent coincidence of impairment of speech with hemiplegia of the right than of the left side—i. e., with injury of the *left* brain. In respect of this point we may note an agreement of observations. We must note at the same time, however, that the coincidence is very far from being invariable.

2nd. We have many observations recorded in especial corroboration of Broca's theory respecting the coincidence of impairment of speech with damage to the third left frontal convolution. In respect of some of these observations, we cannot fail to note an almost too exact agreement. The morbid anatomy of the brain is notoriously a subject requiring very skilled observation, and difficult even to the best trained observer; and when we get a photorgaphic likeness of testimony from observers who have had no special training, and who knew what they were looking for, it is hard to withstand a suspicion of some bias. Not that we need suppose this to be conscious, if it existed; for the great difficulty in observation is, not to see what is looked for, but to avoid seeing it. Inference mingles unavoidably in observation; indeed, half or more than half of what is commonly called observation is inference. Happy, therefore, is the observer who enters on his investigations with a sound theory in his mind.

3rd. A few cases have been recorded in which lesion of the third *right* frontal convolution was *not* accompanied by any aphasia. These may be claimed by the advocates of Broca's theory as affording negative evidence in its favor. Let it be noted, however, at the same time, that they do so only on the assumption of a better foundation for the theory which is in dispute than actually exists; if anyone chooses to maintain that neither the third left nor the third right frontal convolution has anything special to do with the faculty of speech, he may quote these cases as *positive* evidence in favor of his opinion. Moreover, we must not overlook the fact that several cases of aphasia have been recorded in which the morbid lesion was in some part of the *right* brain, the left being to all appearance quite sound. Still more cases have been related of aphasia with *left* hemiplegia, where no opportunity of examining the brain after death was afforded.

4th. Proceeding with our review of observations, we find that not a few have been reported in which, although there had been aphasia, there was no lesion whatever of the third *left* frontal convolution. It may, of course, be said that there was a lesion, and that it was not detected. If we allow, as we may justly do, some weight to this plea, we must not forget that it might be put forward with the same force by anyone who chose to maintain that speech was located in the third *right* frontal convolution.

5th. Some cases have been recorded in which the whole of the left anterior lobe was destroyed by disease, and yet there was no aphasia; and there is, at any rate, one case on record in which there was destruction of the posterior part of the third left frontal convolution without aphasia. Such instances would conclusively negative Broca's theory, unless they can be got rid of by being pronounced untrustworthy, or by the violent supposition that they were exceptional cases in which, by some freak of Nature, the faculty of speech chanced to be in the right brain. See how many hypotheses are necessary in order to prop up a bad generalization. A good structure does not need to be thus shored up on every side, nor stands only by reason of external support.

Lastly, I may mention incidentally, that in 44 cases of impairment of speech out of 332 cases of cerebral tumour, collected by Dr. Ladame, the tumours were more often in the middle than in the anterior lobes, in the proportion of 5 to 4. Tumours in the corpus striatum and pons Varolii were more frequently attended by loss of speech than tumours occurring in any other part of the encephalon. There is no comfort for the advocates of Broca's theory in these observations.

What, then, does this review of the evidence come to? Surely it affords a complete justification of the terms in which I characterised the theory. The one fact which does stand out as supported by some positive evidence, and which has given some show of reason to Broca's fanciful theory, is the frequent coincidence of aphasia with right hemiplegia. If pathological observers had been content to use this as a provisional generalisation, to record it as the lowest kind of empirical law, until further researches had made known the causal law determining these concomitant effects, there would have been nothing to object to. But when they went on to locate a faculty of speech in a particular part of a particular convolution on one side of the brain, they rushed on recklessly to an entirely different conclusion—a conclusion unwarranted by the evidence and unphilosophical in conception. They converted the lowest sort of generalisation into a hypothetical law of causation; and we have seen what shifts they have been driven to, what a host of hypotheses they have been forced to invent, in order to account for contradictory instances and to keep the theory afloat. Thus the pathological evidence offered has been thoroughly vitiated with hypotheses, and entirely fails to satisfy the first requirements of inductive reasoning. Let us now proceed to view it in the light of physiological facts, and see what bearing they have upon it.

The physiology of language.—Time and the occasion will not allow me to do more than direct your attention to certain leading considerations touching this difficult subject. I shall begin by asking whether the advocates of Broca's theory have really considered what they definitely mean by it. For my part, I find it impossible to understand, nor can I satisfy myself that they themselves understand clearly, what they mean by the faculty of speech. It is obvious that they do not intend to denote thereby the muscular acts into which states of consciousness are translated: they would hardly locate the muscular act in the posterior part of any convolution. They cannot surely mean the feelings and ideas of the mind which are translated outwards in speech: they would hardly "crib, cabin, and confine" all the ideas and feelings in the fragment of a convolution. What, then, is that faculty of speech which they locate there? Having the ideas and the ideational centres which minister to them, and the muscular acts and the motor centres from which they proceed, what other special faculty and nervous centre are required for the phenomena of speech? Broca and his followers seem to have deceived themselves by the creation of a wonderful metaphysical entity distinct from the phenomena, which they call *a speech faculty*, and locate in a portion of the third left frontal convolution. Every idea of the mind is then supposed to be obliged to travel there from the most distant convolutions of both hemispheres, from the north and the south and the east and the west of the brain, to get itself spoken—translated into a muscular act of speech. In no other way can it get outward articulate expression. But if this be so, it will be necessary to suppose that nerve-fibres from all the ideational centres of all the convolutions converge to this particular convolution. We know that communicating fibres, the radiating fibres of the cerebrum, do converge from all parts of the convolutions to the motor centres below; but of any similar fibres converging to a particular convolution we have not the shadow of any evidence.

Now the truth is that there is no more a special faculty of speech in the mind than there is a special faculty of dancing, or of writing, or of gesticulating. All the voluntary movements of the body may be called the outward expressions of ideas. The movements of the tongue have not a special kind of connexion with the mental processes, though their connexion is a very intimate one. If a person be dumb, he must use the muscles of some other part of the body to express his ideas, and he may use the muscles of any part that is capable of a variety of motions; these then become his language. A man may learn to write with his toes, but they are not so convenient as the fingers for such a purpose, and therefore it is not worth while learning to do so. So with regard to speech: the tongue is the most convenient organ, because it is capable of such a great variety, delicacy, and complexity of movement, and because its movements, in conjunction with those of the lips, modify sound, and thus make audible language. But because its muscular acts receive, on this account, a special name—are called speech—they are not special in kind, and have not a more special faculty in the mind than any other definite co-ordinate movement has. Where would the advocates of Broca's theory suppose that the faculty of non-articulate language of an intelligent deaf and dumb person was located? To what particular convolution would they assume that the ideas must travel in order to get themselves expressed in gesture language? Would they locate all the bodily movements in the convolutions?

But it may be that those who uphold Broca's theory would argue that their favorite convolution is the seat, not of the ideas nor of the muscular acts of speech, but of the words in which ideas are clothed for expression. Have they, then, reflected seriously on what words are? A word is nothing more than the artificial mark of the muscular act of speech into which the idea is translated, and a name nothing more than a particular word appropriated to mark a certain idea, so that when heard or seen it may excite the same idea in our minds or a similar idea in other minds. The name or word has no independent vitality; it is merely a conventional sign or symbol differing in different languages; nor is it an indispensable instrument of thought. As the example of Laura Bridgman, who was deaf, dumb, and blind, proves, it is possible to think without words as well as to express thoughts without words. The two essential factors in intelligent speech are the idea and the motor act: the former having its seat in the grey matter of the convolutions; the latter proceeding from the nerve-centres of the motor nerves which go to the tongue and other muscles concerned in speech. The subordination of motor to ideational nerve-centre here is in conformity with the subordination of all other motor centres to the supreme ideational centres; and the muscular acts of speech proceed from their appropriate motor centres just as the muscular acts of a limb which is accomplishing some intelligent purpose proceed from its appropriate motor centres. To say that it is in names we think, and to make of the name an influential factor intervening between the idea and the muscular act of speech, it is to mistake names for things; it is to substitute the barren and conventional sign which marks the idea either for the idea itself or for the means of its physical expression, which, as we shall see, do intervene actively in the mental life.

The question of the relation between speech and thought is really only a part of a much larger subject—I mean the intimate and essential intervention of all movements, but especially the movements acquired by education, in our mental life. We do not learn to speak only, but learn to make other designed movements; and as the movements of speech in which we learn to express ourselves afterwards play an important part in the mental processes, so do all other co-ordinate movements which we have been taught to execute. Once acquired, they are thenceforth constituents of the mind. The education of our movements is as necessary a condition of mental development as is the acquirement of ideas. Consider now what this fact physiologically means. It means that the motor centres of the body are educated by practice, until the powers or faculties of definite movements are in some mysterious way organised in them, so that the movements may easily be excited by the will, or may be automatically accomplished, sometimes without will and without consciousness; these exist, as it were, potential or abstract in their appropriate motor centres, not otherwise than as ideas do in their centres. Hence it is that when the hemispheres of the brain are removed in animals, co-ordinate movements may still be executed; and in man, when the functions of the hemispheres are in abeyance, as in the attacks of epilepsy known as the *petit mal*, similar movements go on. Nay, even movements of speech occur in certain cases of apoplexy, where there is reason to believe the functions of the hemispheres to be suspended. We must bear in mind that a connexion is organised between sensation and movement, as well as between idea and movement; so that the latter may be what is called sensori-motor. Hence it is that, on seeing or hearing a word, we may utter it without a thought of its meaning, and we may even read aloud without thought of what we are reading about, the attention being otherwise engaged. Herein we may perhaps perceive the explanation of the fact that certain aphasic patients, though unable to construct a sentence to express their own ideas, are capable of uttering the word when it is suggested to them, or even of reading a sentence with distinctness of articulation. What we have clearly to realise now, however, is, that the faculty or power of co-ordinate movement exists in the proper motor centre, and may be excited by the idea descending from the cerebral hemispheres above, or by the impulse from a sensory ganglion. The stimulus strikes, as it were, upon the motor centre, and releases the movement which is latent in it, which has been organised there by education; that movement, in the case of speech, being what the word denotes.

But there is another most important consideration, which has been almost entirely neglected, but which is of the greatest moment—namely, the influence which the motor centres, when functionally excited, have, not only on the nerves which go from them to the muscles, but on the higher cerebral centres with which they are connected by intercommunicating fibres. The faculties which have been organised in them by education may act, and probably always do act, upwards as well as downwards, and indeed may act upwards without acting downwards. So acting on the supreme cerebral centres, and thus declaring themselves in consciousness, they become what have been called *motor intuitions*—recollections of movement-associations,—furnishing us with the conception of the design of a movement before it is made; that is, in the case of speech, with the word before it is uttered. Without such motor intuition the movement could not be consciously made, or the word consciously uttered; we must have in mind a conception of the design of the act before we can act voluntary—in the case of speech, must remember the word before we can speak it. I am anxious to lay the greatest stress on this essential action of the motor centres upon the higher centres of thought, and to enforce the strict analogy in this regard between speech and other movements. As I have already said, it is possible to think without names, but it does not thence follow that it is possible to think without any means of physical expression. On the contrary, the evidence is all the other way; for Laura Bridgman's fingers worked, making the initial movements for letters of the finger alphabet, not only during her waking thoughts, but in her dreams. These movements were her speech, and the motor intuitions of the centres presiding over them were the names in which she thought. It is therefore misleading to say we think by names. We think by the ideas which names call up in the mind, and by the motor intuitions through which the ideas get definite expression in appropriate movement. And these motor intuitions may be either intuitions of speech or of some kind of gesture-language.

But it will be said, we are capable of thinking, and we do think, of a word before, or without, uttering it in speech. Certainly; only we ought to be careful not to mistake the conventional sign for the thing signified. What we really have, as the essential factor, in the mind is, not the word, but the motor intuition denoted by the word; just as we have in the mind the conception of any other voluntary movement before making it. There is, in fact, a modified activity of the motor centre in relation to the thought, sufficient to suggest the word, but not sufficient to issue in outward expression. It is well known that some persons of a dull and feeble understanding are obliged sometimes to call the actual movements of speech to their aid, in order to get a distinct conception; it does not suffice them to rehearse mentally the words, but they must repeat them aloud; that subdued activity of the motor centres, that internal representation of the words, which is sufficient for persons of ordinary understanding, not being sufficient for their sluggish minds. In persons again who have the habit of talking to themselves, the excitation of the motor centres during thinking passes similarly into actual movements, the internal repetition of the word becoming external utterance; and if anyone will carefully observe himself when engaged earnestly in some train of thought which he is laboring to work out methodically, he will perceive that there is a mental rehearsal of the words which may reach to an actual whispering of them—a perceptible internal twittering of the movement, which may become outward articulation. It is plain, then, that the motor intuitions, not of speech only but of other movements, constantly and essentially intervene, more or less consciously, in our mental processes—that there is a constant interaction between the motor and the ideational centres in cerebration.* In the case of speech we mark each movement by a conventional sign or word, so that the sign comes to stand in our minds for the thing denoted by it.

But it is time to bring to an end this exposition of the relations of language to other movements and to thought. What I have said furnishes merely a general sketch of a subject, the investigation of which, hitherto most grievously neglected, promises fruitful results. From the standpoint at which we have arrived it would evidently be vain and futile to discuss Broca's theory, for it would be impossible to admit the existence of a speech-faculty in the convolutions without supposing that they were the seat of motor centres, and thus abandoning all that we know definitely concerning the functions of different parts of the brain. I need not here venture on any hypothesis as to what are the motor centres of speech—whether they are in the corpora striata, or corpora olivaria, or somewhere else. I assert only a conviction that they, like all other motor centres, are subordinate to the supreme hemispherical ganglia. Broca's theory is inadmissible *a priori*, as well as inconclusive *a posteriori*; it is entirely at variance with the knowledge which we have of the physiology of language, and it is really not supported by the pathological evidence on which it has been based.

The pathology of aphasia.—If what has been said be in the main true, the physiological order of events in the expression of thought is something of this kind:—The ideation which takes place in the cells of the cerebral convolutions passes thence downwards along the radiating fibres to the motor centres of speech, and excites in them the associated motor intuition which has been organised there by education. This done, we have in the mind the word appropriate to the thought, the name with which the idea has been associated. Next, by the action of the requisite volitional impulse, the particular excitation of the motor centre passes along the motor nerves, and puts in action the requisite muscles for the articulation of the word. Thus the thought is uttered or expressed in its appropriate language. In order, however, that the muscles which subserve articulation may act as required, the integrity of another factor is essential—namely, the muscular sense, whereby we are made sensible of the condition of the acting muscle. We may have in our minds the conception of a particular movement, and the will to exert it, but we cannot do so without a guiding muscular sense to enable us to know the condition of the instruments which we are using, and the force which we are applying. When, as sometimes happens, the muscular sense in one arm is paralysed, the patient cannot tell whether he is using the limb or not, unless he look at it; if he is holding something in his hand, and looks away, he drops it. The sense of sight in this case takes the place of the lost muscular sense, and, therefore, when he turns his eye away from the limb he loses all sense of its condition. So with regard to the articulation of words: if the requisite muscular sense fails, the person will not be able to utter the word, though he has it clearly in his mind, and though muscular power remains, unless some other sense supply the place of the lost muscular sense. Now, is it not probable that this is the condition of some aphasic patients who cannot for the life of them spontaneously articulate a word which they have in their minds, but who can do so when any one else suggests it—that is, when the sense of hearing takes the place of the lost muscular sense?

---

* The flow of thoughts in a practised writer is as much aided by the words which he writes as is the flow of thought in a practised orator by the words which he utters. Herein we perceive a reason why skill in writing is rather unfavorable than otherwise to skill in speaking; a habit of association of ideas with different movements having been formed. Obviously there would not be any such difficulty, if the essential factor in thought were the word, and not that which it is a mark to signify.

There are other ways in which the phenomena of aphasia may be conceived to be produced. It is conceivable that there might be lesion of the ideational centres of the convolutions, so that the person cannot rightly co-ordinate his ideas, or cannot call up the idea which he wants, and therefore not the name, all the while, perhaps, fancying erroneously that he has got the idea, and that it is only the name which he wants. I doubt not that some cases of so-called aphasia are examples of this sort—really cases of mental defect. Or there may be some damage to the intercommunicating fibres between the ideational and its associated motor centre, so that the proper name of the idea cannot be recalled, and the patient is obliged to go a round-about way to expresses his idea, or cannot express it at all, or expresses it wrongly. Perhaps he may still understand the word, and even be able to utter it as a sensori-motor act, when he hears it spoken or sees it written. Or, lastly, the injury may be supposed to affect, in greater or less degree, the motor centres of speech themselves, so that the motor intuitions are destroyed, and the individual loses all memory of words, and how to say them.

It is easy, then, to conceive different pathological conditions to account for the phenomena of aphasia, more probable physiologically than Broca's hypothesis, and more in conformity with the morbid lesions actually found in aphasia. For the facts really point, not to lesion of the third left frontal convolution as the essential element, but to lesion of some part of the corpus striatum, or of some motor nuclei or intercommunicating fibres in its neighborhood—to lesion anyhow of some part of the motor centres, or of their communications with the supreme centres. We should bear in mind, that if the actual motor centres of speech be not implicated in the destruction of tissue, they may still be paralysed by the inhibitory influence of a severe damage in their near neighborhood.

A question of much interest in relation to aphasia, and which I shall notice briefly, is as to the cause of its frequent association with right, and its rare association with left, hemiplegia. An ingenious explanation has been offered by Dr. Moxon, which is that the left brain is educated for speech as it is for writing. As a person writes only with his right hand, it is evident that the motor centres in the left brain have been educated for the purpose, and that the corresponding motor centres in the right brain have not been similarly educated. Dr. Moxon's theory is that the education of speech is likewise limited to the left brain, whence it happens that disease or injury in it produces aphasia. An obvious objection to this supposition is, that while there are two hands which act quite independently of each other, there are not two tongues, but one tongue, the symmetrical halves of which constantly act together in all save one or two of its simplest movements—certainly in all the important movements of articulation. Now there is good reason to believe, as Dr. Broadbent has pointed out, that when the corresponding muscles on opposite sides of the body constantly act in concert, the nerve-nuclei of those muscles have such a close commissural connexion as to act like a single nucleus. What justification, then, have we for refusing the same power to one nucleus which we assign to the other over the bilaterally symmetrical action of the instruments of speech? Dr. Moxon seems to forget that the education of the motor nuclei of one side must be the education of those of the other side, if they always acted simultaneously. There is, moreover, no warrant for the assumption, postulated by the theory of a one-sided speech faculty, that a motor nucleus on one side can, independently of its fellow, govern movements on both sides of the body.

Again, if the argument from the supposed analogy of writing—which, however, fails in the essentials of a true analogy—be pressed, we may rightly claim to push it further, and to ask how it is that an aphasic person, whose intelligence is preserved, does not learn to speak with the right brain, as a person suffering from right hemiplegia may learn to write with his left hand. How is it that he does not succeed in educating the right side of the brain to the instigation of simple articulation, more especially when he is able, as he sometimes is, to express his thoughts in writing? There is not any inaptitude of the muscles to prevent him; on the contrary, these may be supposed ready, by virtue of previous habit, to fall at once into the requisite movements on receiving the slightest intelligent impulse.

To me it appears that the action of the two halves of the brain in relation to speech should be compared to the action of the two eyes in vision. A person may see clearly with one eye, or with the other, or as he usually does, the sensations being simultaneous, with both eyes; and so in like manner he may think and translate his thoughts into speech with one half of the brain, or with the other, or as he usually does, their action being simultaneous with both halves. If now it be asked how it happens that a particular lesion on one side of the brain destroys the power of speech, the reply is, that the motor nuclei of the two sides are so closely connected commissurally and functionally that damage to one implicates the other, either directly or by inhibitory action. If a person loses one eye he can certainly see with the other, though the latter is very liable to suffer sympathetically after a time; but if the optic ganglion of one eye were destroyed the function of the other ganglion would probably be abolished in most cases.

Still the difficulty remains as to the cause of the frequent association of loss of speech with right hemiplegia. Is it not possible that the usual limitation of the power of writing to the left side of the brain may after all have something to do with it? The motor centres of speech and the motor centres of writing are evidently in close functional connexion: when a person is writing down the results of reflexion, he rehearses mentally or actually whispers the words in which he is going to express himself; so that there is a constant interplay between the motor intuitions of speech and those of writing. Now if these different motor centres sympathise so intimately in healthy action, it is presumable that they will sympathise in disease; wherefore an injury to the motor nuclei of writing may, though not directly implicating the motor nuclei of speech, still abolish the function of the latter by sympathetic or inhibitory action. But whether this be so or not, it is possible to suppose some anatomical differences, either in the brain-structure or in the disposition of the bloodvessels, which might account for the frequent coincidence of aphasia with right hemiplegia, without the necessity of supposing a location of the faculty of speech in one side of the brain. There must be some such difference to account for right hemiplegia being more common than left hemiplegia.

A few last words touching the state of the intelligence in aphasia. So far we are able to interpret phenomena, it appears that the intelligence is preserved in a few cases, more or less impaired in the majority of cases, and sometimes entirely abolished. No hard and fast line applicable to every case can be drawn. Just as there may be every kind and degree of impairment of speech, so there may be every kind and degree of impairment of intelligence. There are, however, certain general considerations which may profitably be borne in mind when the question of the intelligence presents itself for determination. If what has been said of the physiology of language be correct, and the motor intuitions of speech play the important part in thought which has been assigned to them, it is hard to conceive the abolition of them without serious impairment of intelligence. Though a patient may manifest an intelligent appreciation of simple questions, he may still be incapable of anything like sustained thought. This is a fact which it is not superfluous to note; for some inquirers, having found by simple trials that there was not sheer imbecility in a particular case of aphasia, have hastily concluded that there was no mental impairment. It is not always safe to accept the patient's opinion of his entire capacity, if he should so far recover as to be able to give it; for when he is cut off from his relations with the external world by the abolition of the channel by which he has intelligent communication with it, he is to some extent in the position of a person who is dreaming. And as one who dreams sometimes fancies that he is reasoning most logically, and speaking most clearly and even eloquently, when he is all the while talking nonsense, so an aphasic person may imagine his mental operations to be perfect when they are really very defective. The proof that this is so in some instances is his inability to learn to express himself by some language of signs, which would not be a difficult acquisition if the intelligence were unimpaired. When, however, he cannot learn to do this, it is reasonable to conclude either that he has no ideas to express, or, at any rate, that he has not sufficient intelligence to learn a language which it is not difficult for any person of common intelligence to acquire.

ON THE

NATURE OF ECZEMA FROM A CLINICAL POINT OF VIEW.

WITH A CRITICISM OF HEBRA'S VIEWS.

By Tilbury Fox, M.D. Lond., M.R.C.P.,

Physician to the Skin Department Charing Cross Hospital.

The first step in the future towards a more satisfactory comprehension of the pathology and appropriate treatment of the various inflammatory affections of the skin—and, by reason of their very commonness, they are amongst the most important diseases the practitioner is called upon to treat—should, in my humble opinion, be one which aims at securing a more decided agreement on the part of dermatologists as to the exact meaning and use of the term eczema. At present the most opposite views are held in regard to the definition, the anatomical seat, the alliances and the varieties of this disease. Some authorities, on the one hand, adhere to the doctrine propounded by Willan, that the eruption in eczema is vesicular; others believe that this is by far too limited a definition, and that eczema comprehends diseases which have hitherto been regarded as distinct—having now erythema, now papulation, now fissuring, now pustulation as the characteristic lesion. These several lesions, it is imagined, are merely stages or phases in the development or visible expression of one and the same diathesis, to which the term "eczematous," or as the French have it, "dartrous," is given. This variation in the application of the term eczema, involving as it does great difference of opinion in reference to cutaneous pathology, leads to endless confusion and great disappointment in regard to treatment. In fact, even in ordinary conversation betwixt medical men, it is necessary to seek for a definition of eczema from those who use the word, so as to know at the outset of any discussion on the disease whether the speaker be a disciple of Willan, of Bazin, of Hardy, of Hebra, or of Wilson. So varied and so wide is the difference of opinion on the matter that until dermatologists have agreed as to what eczema is, no satisfactory progress can be made in the therapeutics of inflammatory skin affections.

To clear away this atmosphere of uncertainty, it is of course necessary to enter into an examination of the phenomena of cutaneous inflammation or rather the interrelations of erythema, papules, pustules, vesicles, and the like. This is, in reality, the question at issue; and I do not think the importance of this point is sufficiently recognised. Now the elucidation of such pertinent questions as the following—whether eczema includes that form of eruption alone which Willan defined by that term, or whether it is to be extended in its meaning because other diseases hitherto supposed to be distinct from it (such as lichen, pityriasis, acne rosacea) are but its modifications—is to be sought for not only in a minute pathological search, but most assuredly by clinical observation; and on this account it is that the question of the determination of the nature of eczema has such special interest for the general practitioner, who meets with the disease at each twist and turn of his everyday practice. The appearance, not many days since, of the second volume of Hebra's work on Diseases of the Skin, containing the views of that distinguished man on eczema, lends additional interest to the subject, and is an event of no small importance in relation to the progress of cutaneous medicine. It marks the present as a fitting opportunity for discussion.

Before I proceed, however, specially to criticise Hebra's views on eczema, it may be well to take a brief survey of opinions of modern authorities; and as I must fix at starting some standard of comparison, I select Willan's definition and description of eczema for the purpose. Willan believed that eczema was a disease characterised by the development of minute vesicles aggregated together, and accompanied by slight inflammation, these vesicles quickly rupturing, and their fluid contents drying into thin and yellowish crusts; or, to put it in modern shape, the essential feature of the disease is the occurrence of a seropurulent discharge, necessarily tending to uplift the cuticle so as to produce vesicles, which burst, and let out their fluid contents that dry into thin yellow crusts. Willan regarded lichen, psoriasis, pityriasis, &c., as separate and distinct diseases.

Now, all modern dermatologists of note are in opposition to this view. Mr. Wilson includes under the term "eczematous diseases," eczema, psoriasis (chronic scaly eczema), pityriasis, lichen, impetigo, gutta rosacea, and scabies.

In the French school, the existence of a dartrous diathesis is recognised and insisted upon by Hardy. It includes eczema, pityriasis, psoriasis (lepra vulgaris), and lichen, as different expressions of one and the same nutritive disorder. The French, it will be observed, do not comprise under the term "eczema" so much as Erasmus Wilson, but include four diseases—pityriasis, psoriasis, eczema, lichen—under a single class-term (dartres), and make impetigo a stage of eczema.

The German dermatologists, however, differ altogether from previous authorities; and we may take Hebra as the representative of the German school. His fourth class of skin diseases is entitled Exudative Diseases. Two subdivisions are then made: into (1) diseases with an acute course, including the acute contagious (scarlet fever, small-pox), and the acute non-contagious diseases (erythemata, furuncular, and phlyctenoid, such as herpes and pemphigus); and (2) diseases with a chronic course, including squamous, acneform, pustular, &c.; and Group 2 of the latter class is called pruriginous, and includes eczema, scabies, prurigo. Eczema itself is again subdivided into five sub classes or varieties: (1) Eczema squamosum (pityriasis rubra); (2) E. papulatum (lichen, in fact); (3) E. vesiculosum (the E. solare of Willan); (4) E. rubrum *seu* madidans; (5) E. impetigo *seu* crustosum. Hence Hebra makes pityriasis, lichen, eczema, and impetigo, stages the one of the other, and related to scabies and prurigo. Dr. McCall Anderson and Dr. A. B. Buchanan have founded another classification of eczema, as follows: (1) E. erythematodes; (2) E. papulatum (including lichen simplex and prurigo); (3) E. vesiculosum (the E. simplex of authors): (4) E. pustulosum, or E. impetiginodes (impetigo included); (5) E. rimosum, or E. fendile of the French.

Now, what is my objection to the alliances of eczema as here laid down? Well, I think it is ample and conclusive. I find Hardy, under the term "dartres," which I cannot comprehend, including an hypertrophic state, or an abnormal shedding of the epidermis (pityriasis), an hypertrophous growth (of marked expression) of the epithelial and the papillary layers of the cutis and cuticle (lepra vulgaris) an inflammation characterised essentially by the production of free discharge of very special character (eczema), and an inflammation (lichen) in which there is the infiltration of plastic lymph into the skin,—these four under one common term. Mr. Wilson, whom I always acknowledge as my leader, includes under eczema a disease of the sebaceous glands in which a special formation of new tissue occurs, together with an animal parasitic disease. I find Hebra, and other authorities for whose opinion I have very great respect, comprising under the one head, "pruriginous affections," a neurotic disease (prurigo), an animal parasitic (scabies), pityriasis rubra, and eczema, the latter in its turn including pityriasis rubra in some of its forms and lichen (the variety lichen tropicus, an affection of the perspiratory apparatus, being regarded as a papular eczema). The differences in the intimate pathologies of the several diseases named constitute my objection to the alliances of eczema as defined by Hardy, Hebra, and others.

But I will now specially examine Hebra's views on eczema itself, without regard to its asserted allies. Hebra says: "The name eczema is applied to a disease of the skin, of usually chronic course, characterised by the formation of aggregated papules and vesicles, or by more or less deeply-red patches covered with thin scales, or, in other cases, by a moist surface; while in any of these forms there may be developed in addition, partly yellow and gummy, partly green or brown crusts. This affection is constantly accompanied by violent itching, which leads to excoriation, and it is not contagious.......I do not consider the formation of vesicles, and subsequently of a moist surface deprived of its epidermis, as sufficient to characterise the disease; but take in as varieties of the same malady all the morbid changes seen in the course of development and retrogression of the ordinary vesicular and moist eczema."

Now how does Hebra justify this position? Mainly by artificial experiment, and not by clinical observation. He adduces three main arguments: 1st. "We are able by the action of irritants upon the skin to produce eczema, and may then observe that vesicles or moist places do not follow in each case." Now if Hebra means that the ordinary eruption produced by the application of croton oil is an eczema, I am bound to say that this is an assumption of what is not fact; and granted this, the conclusion of Hebra that vesicles or moist places do not follow the local application of the croton oil is no proof that eczema is not a vesicular disease. But he continues: "Sometimes only redness and desquamation, sometimes papules not bigger than pins' heads, and occasionally the rapid formation of pustules and crusts." I presume this only means that the inflammation produced by croton oil runs through the same stages as other inflammations, varying in degree and extent according to the degree in which the cause acts, and that now and then in an eczematous subject eczema may be evoked by the action of the local irritant.

Hebra, however, divides eczema into five varieties, in accordance with the results obtained from the application of croton oil—that is to say, from experimental evidence, and not clinical observation. These varieties are as follows:—

1. E. squamosum (or pityriasis rubra in some of its forms).
2. E. papulatum, including E. lichenoides, and I suppose simple lichen; for I miss that disease from Hebra's work, though I conclude, from a passage presently to be referred to, that he regards it as the papular stage of eczema.
3. E. vesiculosum, or the E. solare of Willan.
4. E. rubrum *seu* madidans.
5. E. impetiginosum, or the E. crustosum of writers.

The objection to the inclusion of the first two varieties have in part been stated in speaking of the supposed alliances of eczema; but I shall refer to them again in a moment.

Hebra's second argument in support of his definition of eczema is as follows:—"There are very many cases in which we notice on the same patient, in one place, minute scales upon a red surface of skin; in another, red milliary papules; in a third, elevations of the epidermis, filled with watery fluid; and in others, again, spaces partly deprived of their cuticle, moist, infiltrated, and covered here and there with yellow points of suppuration, or with partly green, partly yellowish-brown, crusts." Now, under what circumstances do we notice this? First, in eczema in which some parts are in progress of cure, the discharging surface may become dry and scaly, but as a secondary condition; there may be papulation from the scant secretion of fluid, but it is not that of true lichen simplex; or from accompanying congestion and erection of the follicles of the skin; and these may, fully developed, be germs elsewhere. This does not prove that eczema and lichen, or pityriasis rubra, are the same; nor does it prove that the essential lesion is not vesiculation, or, what amounts to it, the tendency to "discharge" of sero-purulent character.

A similar assemblage of phenomena are present in scabies. We may have in this disease concomitant erythema or eczema, together with the papules of lichen, or follicular congestion, the result of scratching, together with the ordinary vesicles and pustules and crustings of a marked scabies. But all this is not eczema. Scabies is not eczema. The coincidences noticed by Hebra are not necessarily proof of identity. The truth is that Hebra thinks that almost every rash produced by local irritants is an eczema. If anyone doubts this, let him turn to the second volume of Hebra's work, page 89. The only conclusion to be derived from this second statement of Hebra's is this—that red scaly patches, a certain kind of papulation, vesiculation, pustulation, and crusting, may be present in an eczematous patient. This is true, and Willan would have readily admitted it. But this is better noticed in connection with the third and last argument of Hebra against the vesicular nature of eczema. He says: "Observation of the course of individual cases of eczema teaches us that many begin with the formation of small or larger vesicles, some of which develop into pustules, others burst and form moist surfaces, and others become covered with yellow crusts, while the surrounding surface is occupied by a papular eruption, or is simply red and desquamating. Towards the end of the morbid process all the pustules will have turned to scabs; and these, after completely drying up, fall off, and leave the affected parts covered with minute scales, more or less red and infiltrated."

Hebra's conclusion is, that "even the primary form of eczema is not necessarily vesicular, but papules and pustules, mingled with vesicles, or red and infiltrated patches, may mark the onset of the disease." (p. 91.) Now, clinically, is this true? Of course much depends upon the meaning attached to the term eczema, for if that be extended, co-existences may be erroneously regarded as stages. I admitted just now (see argument 2) that the red patches, papulation, vesiculation, and pustulation co-exist; but are pityriasis rubra and lichen simplex stages of eczema? Is the papulation seen in eczema that of true lichen? Is the red scaly patch a primary stage or a secondary stage? Is it pityriasis rubra? Or, to put it into a more practical form, is there a disease whose type and general characteristic is the outpouring of a special kind of fluid which tends to produce vesiculation, to which Willan gave the name eczema? and can the concomitant phases emphasised by Hebra be explained as subsidiary and dependent conditions? Well, I think so, certainly. If eczema discharge, and pus-corpuscles form in the fluid, we have a pustular eczema; if the secretion dry, we must have yellow crusts; if eczema abort, or the fluid exuded be re-absorbed, then we must have red scaly patches, but these are not pityriasis rubra; if the follicles of the skin-glands around the eczema patch become congested, we must have "the surrounding surface occupied by a papular eruption;"—yet eczema is essentially, under these conditions, a vesicular disease, though the vesicular stage is transitory, in direct proportion to the early date of the rupture of the uplifted cuticle.

The most interesting point involved is as to the nature of the papulation in eczema. Most people believe that it is lichen (Willan), and that it is a stage of eczema. Now in the section on differential diagnosis, at page 119, Hebra remarks, "The papular form of eczema, often called lichen, will be readily distinguished from the affection I regard as lichen if the point insisted upon in its definition be steadily kept in view. The chief characteristic of the papules of true lichen is that in their entire course they undergo no transformation to vesicles, pustules, or crusts, but from first to last preserve the papular form unchanged. In the case of eczema we see its papules filled with fluid, many, even while they appear hard elevations, not bigger than millet seeds, so that they readily become ordinary vesicles as their epidermic covering becomes thinner set. Hebra includes under the term lichen only two varieties, lichen scrofulosorum and lichen ruber; but I assert that the lichen simplex of Willan possesses the diagnostic features given by Hebra in the above quotation. The passage I have quoted explains the point I am attempting to illustrate—namely, that in the lichen of Willan the change from papulation to vesiculation does not occur, for in lichen the sub-epidermic material is fibrillating lymph, and not, as in eczema, a fluid tending to the formation of pus-cells. The two papulations are different in aspect also: the papules of lichen are solid and palish, those of eczema vascular and red. In other words, the papulation of eczema is not really lichen; the papules in eczema are often congested and erected follicles, or enlarged and congested papillæ, and, therefore, secondary phenomena. This view of the case is confirmed by a reference to the position assigned by Hebra to miliaria and sudamina, and especially lichen tropicus. In these diseases it is quite true that papules first appear, and then develop into vesicles, and Hebra places them under the head of eczema, of course implying that they prove that eczema may develop out of lichen. But if there be any point upon which I am clear in my own mind it is that the anatomical seat of lichen tropicus is the perspiratory follicles, which become congested and inflamed. Lichen tropicus is not lichen. In this respect Willan certainly erred. The fact is, the term lichen has been given to conditions the most diverse—to solid lymph elevations, congested follicles, miliaria, sudamina, and the like; hence the error that has arisen.

Now, Hebra seems to me to have forgotten that inflammatory affections may offer the closest resemblance—must, indeed, do so—the one to the other, but that they may be at the same time essentially distinct in nature. Inflammation is a condition of disordered nutrition common to many diseases, and whose object is conservative—to bring about reparative action. It may occur from a variety of influences which modify the results in each case. Whenever it does take place, the first step is congestion; then effusion of fluid of varying quality, giving rise to papulation, or vesiculation, pustulation, &c. In small-pox, varicella, eczema, and erysipelas the process of inflammation is the same, only it is modified, as regards results, by the condition of the blood or the behavior of the tissues. Similar stages in different diseases may be mistaken—the papulation in lichen for that of eczema. I have already given the distinction. We do wrong in laying so much stress on the mere inflammation, and in failing to recognise those conditions which so modify the inflammatory process as to lead in one case to the effusion of plastic lymph, in another serosity, in another the formation of pus, and so on. And it must be remembered that Hebra does not believe in the constitutional origin or constitutional treatment of many diseases. With him everything is local; diathesis is nothing, comparatively speaking. And not anything can prove this more completely than his assertion that "it is *faulty innervation* which is the most important element in its production (eczema);" and "that the cause of this change in the nervous system must be left unanswered for the present, since we have no trustworthy observation to direct us on this point,"—in the face of the well-known influence of the gouty and scrofulous habits on the disease. To get over the difficulty of the symmetrical character of the disease—a feature which has at all times been regarded as the strongest proof of the constitutional origin of a disease,—Hebra hazards the statement that "the symmetrical character of an eczematous eruption is more simply accounted for by an original participation of the nerves than by the supposed excretion of impurity in the blood." And Hebra's most unaccountable denial of the power of constitutional influences is again visibly portrayed in the account he gives of the etiology of prurigo. He cannot ascribe the origin to any internal constitutional state, but pronounces it to be, "in the strictest sense, a disease of the skin itself." I lose confidence in Hebra when I examine his doctrines in regard to causation and etiology; and feel sure that he will find himself warmly opposed by English practitioners.

What, then, is the general conclusion at which I arrive? That there is a disease whose main feature is the occurrence of discharge of sero-purulent nature, to which the term "eczema" may be applied. The disease may be abortive, and then the erythematous aspect may predominate, yet there is an attempt at vesiculation: or the exudation may be slight, and only raise the cuticle into what appears to be papulation; or pus may be readily produced, or the secretion may quickly be reabsorbed and scales be produced, or fissuring result at an early stage. It has been therefore said, especially by my friend Dr. M'Call Anderson, that eczema may commence as an erythema, a papulation, a vesiculation, a pustulation, a squamation, or a fissure. Any of these stages of inflammation and its results may be quickly arrived at or specially preserved, but in all cases the tendency is to the outpouring of a large quantity of serosity of special quality from the skin. This necessity tends in the first place to the uplifting of the cuticle by the serosity—i. e., the production of vesiculation, which is rapidly over, because the cuticle bursts and the fluid is discharged; but the tendency to free secretion exists, and is the main feature in the disease. And this vesicular stage is generally passed when the disease comes under the notice of the physician, though vesiculation *may*, with care, be made out at the edge of a patch which is on the increase. It is manifestly unfair to estimate the value or probable occurrence of vesiculation in a disease which is stationary or in progress towards recovery. As I have said before, I do not believe that the papulation of true lichen and that of eczema are the same.

With regard to the nature of the discharge in eczema, Hebra says: "Although I give this special name [*eczem-fluidum*] to the secretion which fills the vesicles of eczema, and, after their rupture and disappearance, is seen upon the surface, I am well aware that it might with equal propriety be termed Plasma, or so-called Inter-cellular fluid. And I do not intend to convey the impression that it is peculiar to eczema, or represents in any sense a special pathological product —a *materia peccans*; for it is well known that the same fluid which fills the vesicles in eczema forms those also of varicella and herpes, and the bullæ of pemphigus, unchanged in its anatomy and chemistry. I therefore choose this term merely as a convenient one to denote shortly the secretion of eczema." (Note, p. 98.)

If the fluid of eczema be not distinct, why does it possess the peculiar character of stiffening linen so remarkably, and drying into characteristic crusts, which is not possessed by that of varicella, herpes, or pemphigus? Of course, in estimating the nature of eczema, we must take its history collectively; but the character of the secretion alone is markedly peculiar. I think that the experience of my readers will bear me out in the statement, firstly, that there is a very definite disease whose main character is the occurrence of discharge or weeping, the discharge stiffening linen and drying into thin yellow crusts, which Willan described as eczema, and independent of lichen; secondly, that, because some papules become vesicles, it does not follow that lichen is eczema.

The contrast between the skin in the lichenous and that in an eczematous subject is very marked. The surface in lichen is dry, harsh, thickened, and often discolored. In eczema it is thin, delicate, sensitive to irritants, and pale. There is a general deposit of fibrinous material in the former in marked cases, which is altogether absent in eczema.

But I am bound, now that I have said what eczema is not, to define what it is. Well, what are its main features as an inflammation?

1. Its occurrence in debilitated subjects.
2. The free and rapid outpouring of fluid in which corpuscular cells freely develop; and its sero-purulent, or rather muco-purulent, character.
3. The rapid proliferation of the connective-tissue corpuscles.
4. The special tendency of the disease to spread by continuity of tissue, and to travel over large tracts of surface.
5. The peculiar crippling of local reparative action which it seems to induce, as though it left a special local tissue debility, so that chronic forms of the disease, especially some "discharge" or "weeping," are left behind.
6. The sometimes free formation of pus with the secretion.

Analogically, eczema in this respect answers, as regards the mucous surfaces, to catarrhal inflammation; and I cannot help thinking that this view of the case gives us the clue to a very simple rearrangement of inflammatory affections of the skin—viz.: catarrhal inflammation, or eczema; plastic inflammation, or lichen; suppurative inflammation, or impetigo and ecthyma; and so on. This is in accord with the mode of arrangement of local diseases which is recommended by the College of Physicians in its new nomenclature report. Willan's vesiculation, after all, means something more than at first sight appears; it implies, in reality, the existence of a special discharge which tends to elevate the cuticle into vesicles, that discharge being of a "catarrhal" character. And this view is still further confirmed by the concomitance of catarrhal disease elsewhere—in lung, intestine, or bladder in eczematous subjects, or the replacing of eczema by internal mucous flux, and *vice versâ;* occurrences which practitioners must find not very uncommonly, especially in old people and in young and weakly children.

And one word in conclusion. It seems to me that the view of eczema which I take is simple and one likely to lead to more satisfactory views as to treatment, because it would indicate, what I am disposed to believe is necessary, a more tonic plan of treatment for eczema than is generally employed, and a soothing plan locally; and for lichen a treatment likely to lead to non-production and subsequent absorption of plastic material. I differ from Hebra in believing that the papulation of eczema is not lichen—that is to say, that lichen and eczema are not the same; in laying greater stress on the "discharge" feature of eczema. I differ from him, also, in regard to the nature of the red scaly patches, and the influence of constitutional conditions. But I hope that the hypothesis of the "catarrhal" nature of eczema, adopted and defended in the little "Manual" which I have just published, may yet bring us into accord.

Sackville-street, Nov. 1868.

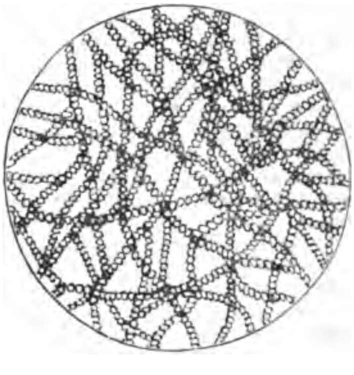
STRUCTURE OF THE ADULT HUMAN VITREOUS HUMOR.

By David Smith, M.D., M.R.C.S.

(Continued from January No.—p. 20.)

It is a general law in the economy that each atom of the body, by its inherent vitality, must appropriate and transform for its own use whatever nutriment it requires. In accordance with this law, it is the part of the structure of the adult vitreous humor to vitalise the histogenetic material which the vitreous fluid contains, for the renewal of its elements, and the maintenance of its transparency. Considered in this light, it is dependent on the ciliary processes for nutriment only in so far as these organs secrete abundantly the vitreous fluid, in which is dissolved a small amount of albumen, but which at the time of its secretion is entirely devoid of organisation. On subjecting a fragment of perfectly fresh vitreous humor to the action of dilute nitric acid, the fibres of the anastomosing cellular tissue are observed, under a high magnifying power, to have strung upon them transparent globules, measuring about 1–500th of an inch in diameter. These globules are quite different, but scarcely distinguishable, from the ordinary vitreous fluid, and may not inaptly be compared to a string of pearls. (Fig. 4.) They consist of a viscid, highly transparent fluid, and cling to the fibres by their own tenacity, or by vital attraction; they have the form of cells, but they are devoid of any cell-wall, and the ordinary vitreous fluid has no effect in

Fig. 4.



Pearly globules attached to the cellular tissue of the vitreous humor. Magnified 200 diameters.

dissolving them; they are so closely set as to touch each other, and they completely mask the view of the fibres which they enclose; and they possess a high degree of refrangibility.

Spectra of these globules have been long familiar to natural philosophers and workers with the microscope as frequent sources of interruption to vision in their scientific investigation; but until the present they have eluded the most searching inquiries in the dead subject. The reason of this is that a few hours after death they spontaneously detach themselves from the fibres of the humor, and coalesce into large drops, which in the aggregate have a slightly yellowish color. A convenient method by which an observer may see these globules in his own eye is by looking through a lens of short focus at the flame of a candle two or three yards distant; but by thus viewing them it would never be suspected that they enclose the delicate structure delineated in Fig. 1 (page 17). Besides age in the dead subject, these globules are also rendered more fluid and become detached by the addition of the caustic alkalies, or by the application of a moderate heat, disclosing the structure which they obscured; but they are not dissolved or detached by the dilute mineral acids. Respecting the nature of the fluid of which these globules are composed, it presents no tendency to pass spontaneously into a state of fibrillation, and therefore it has no claims to be ranked with lymph or any of the normal fluids of the body which contain fibrin; and in being quite insoluble in the ordinary vitreous fluid, it is at once distinguished from albumen, at least in the condition in which that substance is secreted by the ciliary processes. In its behavior with chemical reagents, and in being with difficulty coagulated by heat, it answers to the description of the globulin of the blood. But, whatever name be applied to it, there can be no doubt that it belongs to the albuminous type of compounds; and as the vitreous fluid, when secreted, contains no other histogenetic compound than albumen, it seems a safe deduction that these beautifully transparent globules consist of albumen in the act of undergoing a metamorphosis into a higher state of elaboration. As to the office of these globules in the vitreous humor, by forming an impervious coating upon the fibres of the anastomosing cellular tissue, they protect the latter from maceration in the fluid in which it is constantly bathed, and their plastic property will necessarily add strength to the fibres. But their prime function is, no doubt, the supply of nutriment for the fabric of the humor, or for other parts.

Assuming these globules to be derived in the manner already supposed, their formation is dependent on the assimilating power of the tissue of the humor, which in that case must be endowed with a certain amount of vitality. We have abundant evidence of the existence of this force in the humor: in its development in the embryo; in its organisation in the adult; in its undergoing molecular decay, the products of which have been demonstrated in the vitreous fluid by chemical analysis; in its constant maintenance in a state of transparency, though it contains a decomposable structure; and in its undergoing the process of putrefaction after death. It would seem, also, as if the globules adhere to the tissue by the force of vital attraction; for they become detached of their own accord soon after death. But if any doubts exist as to the presence of vital force in the humor, they are at once dispelled by the evidence of pathology. The vitreous body, or the tissue which it contains, is subject to inflammatory action; it throws out and vitalises inflammatory products into organised tissue, or matures them into pus; if the tissue of the humor be broken up by the surgeon or by accident, reaction comes on; and foreign bodies become encysted in lymph in the centre of the humor without obvious assistance from any vascular part of the eyeball. It is presumed, therefore, that these globules or beads of plastic fluid owe their formation to the anastomosing cellular tissue of the humor, accumulating around its fibres by its inherent vitality the albumen which the fluid of the humor contains, and elaborating it by prolonged contact into a compound of higher nutritive value; and the obvious relation of these globules to the tissue of the humor, and their attraction for it during life, give them a special reference to the process of nutrition. Such a process has its prototype in the connective tissues of the body (from which the vitreous humor in the embryo is developed), by the serous fluid of the blood, itself unorganised, being converted into organised corpuscles simply by its passage through the meshes of these tissues. With regard to the reason why the plastic fluid, in attaching itself to the fibres of the humor, assumes the corpuscular or globular form rather than a smooth continuous layer, I do not pretend to offer any precise information at the present time, only that it is a common physical phenomenon in the operation of capillary force.

But besides protecting and nourishing the structure of the humor, the pearly globules of its fibres are probably ultimately destined to serve a still more important end—viz., the nutrition of the crystalline lens. Almost two-thirds of the latter body is embedded in the front of the vitreous humor, both structures lying in close contact. The cellular tissue of the vitreous humor converges towards, and is crowded behind, the crystalline body, to the posterior capsule of which it is adherent, and that so intimately, in the whole of its extent, that the two are never completely separable. The capsule of the lens is a highly transparent membrane, four or five times thicker in front than behind, and in the latter situation forms the only intervening substance between the lens itself and the structure of the vitreous humor. A thin section made in the direction of its thickness, and rendered partially opaque by dilute nitric acid, shows it to be channeled by many tortuous pores, which form indirect communications between its two surfaces. These pores are occupied by a transparent fluid having all the characters of the pearly globules of the vitreous tissue. Near the centre of the posterior capsule a close net-work of extremely minute capillary vessels exists in many of the lower animals. The crystalline lens is an isolated body in the interior of the eye, and is dependent for its nutrition on one or more of the media which surround it. In many respects its nutrition resembles the same process in the vegetable kingdom. Thus, its structure continues cellular throughout the whole of its existence; it possesses no nerves, and therefore its nutrition is beyond the influence of the nervous system; the nutrient fluid which its cells contain is globulin, and albuminous compound which has no tendency to assume spontaneously a higher grade of organisation; and lastly, when the structure of the lens is once fully formed, it is subject to little change of material. It has been long held that the lens derives the greater part of its nutriment through the vitreous humor, but the structure of the latter not having been satisfactorily determined, the evidence of this was arrived at by "*exclusion.*"* When the choroid or vitreous humor is inflamed, the products arising therefrom are abundantly found in the neighborhood of the lens, and the latter also participates in the morbid action. If the vitreous humor be disorganised, or a great part of it lost by accident through a wound of the tunics of the eyeball, without injury of the lens, cataract follows; while if the lens be dislocated from its ligamentary attachment, but still adherent to the vitreous body, it generally remains transparent, unless the latter be disorganised. The convergence of the anastomosing cellular tissue of the humor to the posterior surface of the lens indicates an intimate association of the nutrition of the two structures, and this is peculiarly borne out by the structure of the humor in birds. In that division of the animal kingdom the lens undergoes more rapid molecular changes than in any others, and the individuals of this class have a special provision existing within the eye for the supply of the extra demand which necessarily falls upon the nutritive processes. This consists of a process of the choroid, called the *pecten*, which passes through an opening in the retina at the bottom of the eye, and forward in the substance of the vitreous humor to near the posterior surface and external margin of the lens. Filling up the link between the tip of the pecten and the lens is the anastomosing cellular tissue of the humor, which radiates in straight lines from the former to the latter, thus establishing a communication between the vascular choroid and the lens, and which it will scarcely be doubted conveys nutriment to the latter.

These facts point to the vitreous humor as being the principal source through which the lens is nourished, thus confirming the hypothesis which has all along been entertained; but the manner in which this takes place has never been explained. As the aqueous humor and the ordinary fluid of the vitreous humor contain only a fractional part of formative material, which, moreover, is entirely destitute of organisation, the transudation of these fluids through the capsule, in sufficient quantity to be of any service in the nutrition of the fully-formed lens, would, from the experience we possess of its nature, tend to its disorganisation and opacity rather than its nourishment and transparency. Indeed, the capsule of the lens possesses a power which, whether vital or elastic, prevents the transudation of watery fluids through its walls during life—a power which it loses soon after death, and then it allows ingress to the fluid humors of the eye. The same force confers upon it an elective affinity by which it is enabled to take up the small amount of albumen dissolved in the aqueous and vitreous humors; and, therefore, the anterior capsule is probably also concerned to a small extent in the nutrition of the lens. But considering the facts already stated as to the close relationship of the vitreous body and lens, coupled with the additional fact that the anterior capsule is four or five times thicker than the posterior, we must regard the vitreous humor as the reservoir of its nutritive supply. The plastic substance which I have described as adhering to the vitreous tissue in the form of globules is the only compound which the vitreous humor contains capable of undertaking this office, for which it seems well suited in every respect. Its immiscibility in the ordinary fluid of the vitreous humor enables it to be conveyed to the lens in a concentrated state, ready to be received as nutriment by the latter; its plasticity and higher degree of vitality than the ordinary vitreous fluid give it a greater vital and physical attraction for the capsule; while identity in chemical and physical properties to the fluid that pre-exists in the cells of the crystalline lens makes it as nearly as possible a certainty that it is the pabulum of that body. As the pearly globules have no proper cell-wall, and are not confined to tubes, the onward movement of these to the lens as the latter has a demand for them must be mainly owing to that vital attraction which everywhere exists between pabulum and tissue, and which in the body generally exerts so much influence on the onward movement of the blood in the capillaries. In the present case, however, the elasticity of the fibres on which the globules are strung, as well as the tension of the humor generally, will combine with the vital attraction to give these globules an onward movement corresponding to the direction of the fibres, which is centripetal, or that towards the lens. Thus the crystalline lens of the eye is supplied with transparent nutriment for the repair of its waste by a simple and highly eligible process. It demands its nutriment in a state of concentration and in a high degree of transparency. The colorless elements of the blood are those only capable of being applied to the nutrition of non-vascular parts; but these elements exist in solution in the serum of the blood in such insignificant quantity, that if the latter were applied directly to the lens it would at once destroy its transparency. But Nature overcomes this obstacle by causing the serum of the blood first to pass through a structureless membrane—the zone of Zinn—to insure its transparency, and afterwards among the meshes of a living structure to separate the formative material from the mass of the fluid in which it is dissolved, and thus by enhancing its vitality renders it capable of ministering to the repair of the lens. This view of the vitreous humor magnifies the importance of its function as a component part of the eye, and makes it as essential to the health of the lens in the adult as it is to its development in the fœtus. Both in the fœtus and adult the vitreous humor is to the lens what the roots are to the plant: it selects the crude material from the blood, elaborates it into nutriment within itself, and, having satisfied its own demands, conducts it onward to the crystalline lens.

(To be continued.)

---

* The structure of the humor, as now revealed, renders this supposition almost a certainty.

REMARKABLE CASE OF LAUDANUM-POISONING BY AN ENEMA.*

By Charles Finlay, M.D.

On the 9th of May, 1867, I was called at 11 A.M. to a lady, who I was told, had been in a fit since 7 A.M. On reaching the house I learned the following particulars:—The patient had never been subject to fits nor to hysteria or nervousness, but her most usual complaint had been abdominal pains, for the relief of which she sometimes made use of injections containing laudanum; yet no one had seen her use them, or knew of her having done so recently. At 5 A.M. of that morning she had, as usual, called up her chambermaid to the milkman. At 6.30 a cup of coffee was taken to her room, but she declined taking it, alleging that she did not feel very well; and at 7 A.M. one of the children, a boy ten years of age, had seen her get out of her bed, stagger, and fall to the floor, tossing and writhing as if in convulsions. Moreover, during the last few days the patient had scarcely tasted her food. Since seven o'clock she was said to have remained in the same state as that in which I now found her. Such were the only particulars which, by dint of questioning and cross-questioning, I was able to gather at my first visit.

The patient was a lady forty-nine years of age, of spare habit. She lay comatose on her back, the head resting as if inert; eyes closed; face and neck flushed, and the fingers and wrists occasionally jerked by spasmodic twitchings of the tendons. Over the left brow and temple I found an extensive ecchymosis from a recent contusion, and others over the left shoulder, left elbow, and right hip, a scratch over the right shin, and on the radial border of each wrist discolorations as if from pressure. The pupils of both eyes were much contracted; the pulse moderately full and slow. The patient could not be roused by loud calling, or shaking, or by the dashing of cold water on her face. When raised to a sitting posture her head would fall backwards or sideways. The only signs of susceptibility to outward impressions were—1st. Slight contraction of the upper eyelids when water was forcibly dashed upon them. 2nd. Liquids introduced into the mouth were slowly swallowed, and, as it seemed to me, somewhat more readily when the patient was imperatively told to do so. 3rd. When asked to show her tongue, while the mouth was kept forcibly open, there were some slight attempts to move it. The case, as will be seen, was a perplexing one, considering that I had no direct evidence that laudanum had been used, while, on the other hand, many of the symptoms, together with the bruised head and contusions, suggested the possibility of foul play. A prompt diagnosis was necessary, however, as the treatment in each case would be very different. I decided to consider the case as one of opium-poisoning, grounding my opinion upon the contracted state of the pupils, the character of the stupor (resembling that of narcotic poisoning rather than a true state of coma), the absence of convulsions or paralysis, and the traces, however slight, of susceptibility to outward impressions. The breathing was slow and heavy, but not stertorous. I ordered ice to the head; the patient to be constantly teased by dashing cold water on her face, shaking, and loud calling; coffee to be given; injections of salt and water to be frequently applied, and every hour three minims of tincture of belladonna, followed after half an hour's interval by an ether mixture.

No signs of consciousness had occurred at 2 P.M.; but there were occasional contractions of the upper eyelids. The face was now very pale, the pulse scarcely perceptible at the wrist, and the subsultus tendinum more frequent than at my previous visit. The patient had taken four doses (twelve minims) of belladonna: the last dose within a few minutes. The pupils continued contracted. I applied my mouth to her ear and shouted her name. She was aroused, and, starting wildly, asked who had called her, threw her arms about as if out of her mind, and, after a few seconds, relapsed into unconsciousness, all my immediate efforts to again rouse her proving unsuccessful. The same treatment continued.

At 5.30 P.M. she again recovered consciousness, expressing sometimes by signs that she could hear, though unable to open her eyes or speak; the latter symptoms were not the result of general debility, for she could move her arms quite freely.

At 6.30 P.M. she suddenly relapsed into stupor, or rather into a state resembling syncope: the face became very pale, the pulse at the wrist could not be felt, and the breathing was very irregular, with a tendency to become weaker at every moment, occasionally ceasing altogether, until again awakened by artificial means. By the frequent administration of the ether mixture, and the employment of artificial respiration (which measures occupied upwards of an hour), the pulse returned, though very feeble, and the patient was able to make some automatic movements with her arms, and occasionally to turn in her bed; but no signs of consciousness appeared. No urine had been passed during the whole day, and the injections had had but little effect. The belladonna I suspended, fearing to aggravate the suppression of urine and the tendency to syncope; and the ice to the head was also discontinued. I now ordered the ether mixture every hour until some decided improvement should be observed; purgative clysters, mustard plasters to the extremities, and attempted, without success, to administer a dose of castor oil.

Second day.—At 7 A.M. I was told that the patient had been conscious since about 5 A.M., though unable to speak or to see, and deprived of the sense of taste, as she could not discern sugar-and-water from plain water. The eyelids were closed, the patient's efforts to raise them producing only short tremulous contractions, and when held open by the fingers the eyeballs were seen to be turned upwards and a little inwards, from which position she could move them only to a slight extent, and for a short time. The loss of voice was unaccompanied by any difficulty of breathing or of swallowing and the tongue could be protruded readily without any deviation from the median line. The senses of hearing and of smell were not affected. The patient now complained (by signs) of severe headache, general debility, and soreness in the site of the bruises. Her skin was very hot; pulse 90. No urine had been passed; the bladder did not appear distended. I prescribed two ounces of castor oil, to be followed by injections, the ether mixture continued every three hours, and a blister to be applied to the calf of the leg.

---

* Communicated by Dr. Sieveking.

It was only then that I was informed that the patient *had* actually used laudanum on the previous morning, a four-ounce phial, which had been previously full, having been found two-thirds empty, and a small syringe, empty, but retaining traces of the recent use of laudanum. The bedclothes also had been found stained with it.

At 10 A.M. the patient continued in the same state, but complained of pain over the epigastrium. No urine had been passed. Ordered linseed poultice, linseed tea, and former general treatment continued until a catheter could be procured.

At 2 P.M. the bowels had been moved and urine discharged abundantly. The blister was very painful. The eyelids were still very weak; the eyes with a tendency to roll upwards, and without sight. No sense of taste; and the patient still unable to articulate. The mouth and fauces were dry, and the patient seemed to experience a sense of constriction about the pharynx. The skin less hot. Emollient drinks and broth prescribed.

Third day.—At 7.30 A.M. I found that the patient had recovered sight and speech since about 3 A.M. Her intellect was quite clear, but she could not yet discern the taste of sugar-and-water. The pupils less contracted, and the eyelids could be kept open. Milk diet prescribed.

In the evening of the same day a bilious diarrhœa set in, attended with severe pain extending from the right hypochondrium to the umbilicus. The patient mentions that she does not *feel* the clysters, the rectum being benumbed. Emollient treatment.

Fourth day.—The sense of taste completely restored, as also all the other functions. The patient continues very weak. The pain and diarrhœa lasted until the evening, and yielded to a dose of three grains of tannin.

From that time the strength gradually returned, and after another week the patient was able to undertake a trip to the country.

I have thus minutely described this case because it seems to present several features of interest, both for the toxicologist and the physiologist. To the first, the introduction of such a dose of laudanum per anum, with full time for absorption, and followed by recovery, but more especially the subsequent impairment of the organs of special sense, will afford matter for speculation. To the physiologist, the mode of development of the paralysis (if I may so call it) must appear remarkable; since it is impossible to refer it to any cause operating upon the cerebral origin of the nerves which minister to the organs implicated. I say it is impossible that any sudden cause should affect the origin of the optic nerves, some parts of the third pair, the glosso-pharyngeal and spinal accessory, while it would spare the other cranial nerves, as a consequence of poisoning per anum. After due reflection, the only clue which I can offer is the following suggestion:—Those organs which, either accidentally or otherwise, had been allowed to remain inactive during the greater portion of the period of narcotism would require a longer time than the rest to recover from their local stupor. Thus the eyelids and eyes, in their impaired condition, snowed a disposition to continue precisely in the same state as that which they assume during normal sleep (namely, the eyelids closed, the sense of vision obscured, and the eyeballs rolled upwards and inwards), and which it is but fair to suppose they retained during the period of narcotism. The organs of phonation, which had also remained inactive during a similar length of time (both having been last aroused during the short period of consciousness at 2 P.M. on the first day), required the same space of time as the organs of sight to awake out of their benumbed condition; whereas the senses of smell and hearing and the general sensibility, whose functions are independent of the will, and were in this instance kept constantly aroused, returned to their normal state as soon as the return of consciousness enabled them to manifest themselves. As to the sense of taste, it is not to be wondered at that it should have been the last to recover, if we remember that even after ordinary sleep it is the last sense to reassume its normal sensitiveness, as anyone can testify who has seen patients swallow with comparative ease, on first awakening, drugs which they could scarcely be made to take at other times. In support of my views, I may call attention to the circumstance that the organs of sight and speech had remained as yet unimpaired at a time when the direct action of the poison must already have been at its height, seven hours after its introduction, when the patient was momentarily aroused and asked who had called her. It was only, then, during the following period of unconsciousness (from 2 to 5 P.M. of the first day) that she lost the use of those organs. Finally, I would observe that in every instance the patient recovered one or more of the impaired functions on awakening from her normal sleep.

Havanna, 1868.

CLINICAL NOTES FROM LECTURES IN THE COURSE OF CLINICAL INSTRUCTION AT ST. MARY'S HOSPITAL.

By Haynes Walton, F.R.C.S.,

Surgeon to the Hospital.

HARE-LIP.

Gentlemen,—On the 18th November of last year, three cases of hare-lip were operated on; one of them, as you know, was done by myself, and it is taken, together with others that have been under my care, for the subject of my clinical remarks to-day.

The cases that I shall bring before you were all of the single complicated variety, in which were involved the lip, and the upper jaw on one side. The hard palate, and the soft, were cleft through their entire extent. The bone does not always suffer as much; sometimes it is only partially affected. Even when the division runs through it, the soft palate may be unaffected.

The first question to be discussed is the period at which an operation should be undertaken for the closure of the lip. My own experience tells me that it should be done as soon as possible after birth—that is, within the month—in all cases in which, like those under consideration, the bone is divided as well as the lip. Except the lip be closed the child cannot nurse, and even fails to take sufficient food in any other way, because it cannot swallow quickly all that is put into the mouth; and emaciation ensues, and renders it less fitted for the operation, and is often the cause of death. Many surgeons are deterred from operating so early from the fear of fatal convulsions; but it is my belief that the liability to such has been greatly over-rated—that their appearance is due to loss of blood, and not to the mere irritation of the operation, and that more lives will be saved by operating a week or two after birth than by doing so some weeks or months later, when the child has all the marked symptoms of starvation, and is therefore unfitted to lose a drop of blood. I have myself operated many times before the child was a month old, and in every instance with perfect success. It has been erroneously supposed that in very young children the flesh is so soft that the pins or sutures readily cut through it. I say, therefore, as soon as the unfortunate child is born, have it fed most carefully and sufficiently long each time, till enough, or nearly enough, milk is consumed, and operate early, and before emaciation sets in. When the lip is united it can suck, or be fed. In those cases in which the lip only is cleft, the operation may be delayed without disadvantage, because the taking of food is not interfered with. In the miserable child lately before us, about two months old, there was so much emaciation that I kept it in the hospital for a fortnight, and had it fed by a clever nurse, and so improved its condition a little. It seemed scarcely safe to operate on such an ill-nourished subject.

Whether it be better for the health of the child or not to give chloroform is not easy to decide. Sometimes I give it, and sometimes I operate without it; but of this I am certain, that at this early age the surgeon derives no benefit from its administration. The patient is too feeble to offer any resistance.

The lip is the portion of the deformity first to be operated on, and there are three steps or stages to be accomplished. Failure in any of them will be fatal to success. The first to be done is the paring of the edges, whereby it is prepared for adhesion. This procedure is very often improperly executed. The child should be secured for the operation, and the operator should stand in a convenient position. These can be accomplished only by the operator sitting, and holding the head of the infant between his knees, while the rest of the body is supported by an assistant. I operate, as you observed, with a very narrow scalpel. I transfix above, and cut downwards in a curved direction, because when the two curved surfaces are brought together, the free edge of the lip is thrown sufficiently down. When the incisions are made straight in a Λ-shape, the edge of the lip is not natural, but there is a retiring angle, that which generally constitutes so much after deformity.

The manner of dealing with the hæmorrhage is simple. If the coronary arteries be compressed with the fingers, on one cheek by the operator and on the other by the assistant, no blood will be lost, if the operation be quickly done, that can hurt the child. The operation can be proceeded with while such pressure is being made. As soon as the lip is put together, the arteries cease to bleed. Every part of the edge of the fissure must be removed, together with some of the red portion, no matter how extensive may be the incision necessary to accomplish this. Few young surgeons have courage enough to take away a sufficiency. Attention should next be directed to the alveolar process. If there be the slightest projection, the prominence should be brought to the level of the rest, by snipping through the arch, at the spot between the lateral incisor tooth and the canine, with the forceps, and pushing it back. [Drawings were shown of the several degrees of the defect.] On no account should any part be cut away. The teeth are to be preserved, and the mouth made more perfect by following my plan. In my last case I was able to fill up the gap in the bone, as you saw. The loosening of the lip—that is, the raising of it from the surrounding parts—should now follow, and I do not know how I can impress on you the importance of doing it to the required extent, except by asking you to remember how extensive was my dissection, and telling you that without it there will be frequent failure of union. It must be so separated all around, even in the direction of the nose, that it will hang loosely, and admit of being transposed so completely that there shall not be the slightest tension when the parts are brought together. You will not forget that the child's nose was fairly separated from the maxillary bones.

The last proceeding is the adjusting of the wound. This little practical fact which I give you will save you much trouble, and benefit your patient. Commence the adaptation from the lowest part. Begin by making the edges below correspond, and all the rest will easily fall into a proper place, no matter what the dissimilarity in the length of the two flaps. You saw how carefully I did this with a soft iron pin. To complete the operation on the outside of the lip, I used two other pins, in all three of them. In securing the pins with the ligatures, I tie each separately, and it does not matter whether this is done with a single round tie, or by twisting the thread in the figure of 8. I generally end the whole by an internal suture near the edge of the lip, to ensure the healing of the mucous membrane. The best result will be got if you follow my steps, even better than the plans of Malgaigne and Langenbeck. The sutures are generally removed too early. Take out one pin at the end of four days, then another each day, and then the stitch. A truss for pushing the cheeks forward is useful in most cases. The parts are kept quiet, and any strain on them is prevented.

◆

A CASE OF SYMPATHETIC OPHTHALMIA CURED BY NEUROTOMY: A SUBSTITUTE FOR REMOVAL OF THE EYE-BALL.

By J. Z. Laurence, M.B., F.R.C.S.,

Surgeon to the Ophthalmic Hospital, Southwark, and to St. Bartholomew's Hospital, Chatham.

Sympathetic ophthalmia is, undoubtedly, one of the most dangerous forms of ophthalmia, both from its insidious progress and its ultimate effect—blindness. It is, in nine cases out of ten, an inflammation of one eye succeeding traumatic destruction of the other. Its symptoms are of an asthenopic nature: intolerance of light, inability of using the eye for any length of time, watering and redness of the eye, and (what is pathologically of cardinal importance) *fine capillary injection and tenderness of the ciliary region*—"cyclitis" of German authors. After a time, a slow plastic form of iritis sets in, ending in occlusion of the pupil, softening and atrophy of the globe—in a word, in blindness; and as the primarily injured eye is generally destitute of sight, the patient becomes totally blind.

Now it was found that but one, desperate, remedy existed to check the sympathetic ophthalmia—namely, removal of the primarily destroyed eyeball: an operation severe, bloody, and disfiguring to the patient—an operation only admissible from the known funestral consequences to the sympathetically affected eye if we allowed the injured one to remain.

After it was established that sympathetic ophthalmia consisted in propagated *cyclitis*, Dr. E. Meyer, of Paris, on a suggestion of Professor von Graefe, in three cases succeeded in curing the sympathetic ophthalmia by *dividing the ciliary nerves* of the primarily affected eye. He has been followed by Prof. Secondi, of Genoa; and now I have the honor to lay before the profession a fifth successful case.

T. S——, aged twenty was admitted into the St. Bartholomew's Hospital, Chatham, under my care, on June 20th. Twelve years previously a piece of steel had struck his left eye. He had still perception of light; sclerotitis and cyclitis were present. By means of a probe, it was found that the most tender part of the ciliary region was situated downwards and outwards. The tension of the globe was normal. He complained of great intolerance of light in the uninjured eye—the right one; as soon as he fixed this upon any object pain and watering ensued, so that the eye was practically useless to him for any near occupation; but for distant objects his vision was found to be perfect (S=1). On the 22nd I made an incision of about half an inch along the tender part of the ciliary region of the primarily injured eye; a little vitreous escaped.

Aug. 3rd.—Left the hospital perfectly cured. He could now read for hours together with comfort with his left eye, and all traces of the trifling operation on his right eye were gone.

On October 24th a letter was received from the patient, stating that he could "read for five or six hours at a time without any pain whatever;" that he is engaged in "steel-turning, which is very trying to the eyes, but is happy to say it does not affect him but very little." The eyes do not water. He finds working by gas-light painful, but daylight does not affect the (right) eye in the least. He finds objects appear to him "closer than they really are."

Devonshire-street, Oct. 26th, 1868.

ON

THE VALUE OF QUININE IN DELIRIUM ASSOCIATED WITH RHEUMATIC PERICARDITIS.

By J. M. **Winn**, M.D.,

Late Resident Physician of Sussex House Lunatic Asylum.

There is scarcely any disease which a medical man approaches with more anxiety than acute pericarditis, when it is accompanied with delirium. The instances of recovery are very few.

I do not adduce the following case as presenting any especial novelty in its features, but to show the great value of quinine, and to encourage a prompt and bold use of this remedy in cases of this kind.

A fortnight since I was summoned to see, in consultation, a young gentleman, fifteen years of age, who had been delirious for three days, and had been attacked with symptoms of rheumatic fever about a week previously. On listening to the heart's action, I found loud and extensive friction sounds over its surface. The left wrist was slightly swollen and tender; the tongue red and smooth; bowels slightly confined; skin moist but not perspiring profusely. The patient had been taking bicarbonate of potash, and a blister had been recently applied to the region of the heart. I suggested two grains and a half of quinine every four hours, combined with mucilage, and twenty grains of bicarbonate of potash.

The effect of this treatment became rapidly evident; and on the eighth day after I first saw him, the friction sounds had entirely ceased, the patient was sitting up, and all the dangerous symptoms had disappeared.

Harley-street, Oct. 16, 1868.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

> **Nulla autem est alia procerto noscendi vis, nisi quamplurimae et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—Morgagni** ***De Sed. et Caus. Morb.*****, lib. iv. Proœmium.**

LONDON HOSPITAL.

A CASE OF ACUTE MUSCULAR ATROPHY.

(Under the care of Dr. J. Ramskill.)

So extensive a field is that which supplies the London Hospital with patients, that the wards of that institution usually contain a greater number of what are called "interesting cases" than is to be found in any other hospital. In two recent visits we accompanied Dr. Ramskill in his rounds and noted down far more cases worth recording than we can find space for. We propose, however, to refer to a few of these, of necessity very briefly, on the present and future occasions. The case immediately noted is a very curious one, and is well worth a visit by those interested in the question of "wasting palsy." The man lies in bed, very helpless and emaciated. His feet are "dropped"—i. e., they are not upheld by the flexor muscles, and so are his hands, though the right has considerably improved in this respect since his admission. His pulse and temperature are constantly high. Examining him for ourselves, we confess to having formed the impression that his symptoms were due to starvation (caused by chronic dysentery) in a syphilitic patient; and that there was not sufficient evidence to justify the case being considered as one of that class to which the name of "wasting palsy" is applied. But Dr. Ramskill pointed out to us (what is certainly a very important feature in the case), that the great wasting appears to have been singularly acute. It took place in two or three weeks; and it is thought by Dr. Ramskill that it affects the extensor group of muscles in both extremities in a greater degree than other parts of the body. On the other hand, there is no marked "main en griffe" which is so often noted in wasting palsy. We append a few memoranda of his case.

James H——, aged thirty-four, ship steward, was admitted on June 16th, 1868, with general muscular atrophy, which was especially marked in the extremities. He could not stand, and could only move his legs with great difficulty and pain in the knee-joints and ankles. He could just lift his arms off the bed clothes, but his hands and fingers were perfectly helpless, and his wrists were dropped. There was so much wasting that his appearance was skeleton-like. This was briefly his history:—On his way home from Calcutta about three years ago he had a bad ulcerated sore-throat, which affected him on and off for two months. (Denies ever having had any venereal disorder.) At this time, too, he was attacked with dysentery, from which he has continued to suffer. In Nov. 1866 he sailed from London to Madras in very fair health, but after six weeks his dysentery returned and went on for three weeks, during which time he became very weak. Does not think his gums were swollen or sore. He had been living well, and had eaten potatoes daily, which he continued to do throughout the voyage, so that he evidently did not suffer from scurvy. When the dysentery got better his feet swelled. He lay up ten days, and then got about, but his arms became very weak. This went on, and on landing at Madras he went into hospital for eleven months and came out improved, but still invalided. He at that time had dysentery and what he calls chronic rheumatism. Went on board and worked for ten days. Then his feet swelled and he went into sick birth, remaining there till he arrived in England in June last. During the last month on board ship he wasted rapidly in the arms and legs. In about a fortnight he lost the use of his hands and feet.

For a twelvemonth before admission he had suffered from a skin eruption, apparently syphilitic. After leaving Madras Hospital he lost the sight of his left eye for a time, regaining it partially afterwards. Left pupil is smaller than the right. He has probably had iritis. There is a scaly rash on the face and legs; the body covered with a papular eruption; bowels still affected with dysenteric diarrhœa.

On July 2nd it was noticed that in the thighs and forearms a strong magneto-electric current was feebly felt, or not at all, and electro-motility was absent.

Oct. 28th.—He says that on the whole he is a great deal better than on admission. He has more strength in his arms, but the feet remain as before. The flexors of the feet (extensors of toes) are quite useless. He cannot stand or help himself.

He has been faradised daily in arms and legs, and sensation has greatly improved in the extremities, but not much in the feet.

◆

ST. GEORGE'S HOSPITAL.

A CASE OF SEVERE DIPHTHERIA, WITH UNUSUALLY SLOW PULSE, AND SLIGHT CONSTITUTIONAL SYMPTOMS.

(Under the care of Dr. WADHAM.)

IN the following case the interesting points were remarked by Dr. Wadham to be—1st, the length of time during which, with the disease upon her, the girl was able to keep about. 2nd. The appearance of the throat, which, in the absence of albuminous urine, might have been mistaken for tonsillitis. 3rd. The very slight constitutional symptoms; and the question which arose on the last day of her illness, when death from both apnœa and asthenia were threatening her, as to whether tracheotomy was advisable. The peculiar character of the breathing, leading to the supposition that the disease extended into the bronchi, prevented this being attempted, and the result of the post-mortem examination proved that such an operation would have been perfectly useless.

Jane P——, aged eleven, who had been living in a house at Bow in which a child had lately died of diphtheria, was admitted on October the 30th, having for one week previously complained of sore-throat, which had not, however, prevented her going about as usual.

On admission, she complained of pain when swallowing, slight headache, and lassitude. The tongue was white and furred, the bowels open, the temperature normal, and the pulse 86, soft and weak; on the right tonsil there was an irregular, deep ulceration, covered with an ash-colored slough. She was ordered perchloride of iron and quinine, to be taken every four hours; beef-tea, milk, and four ounces of port wine. The urine subsequently examined was found highly albuminous.

On the 21st, after passing a good night, her throat and general symptoms were much the same. The wine was increased to six ounces, and on the following day to eight; and until the 24th there was no marked change. The child seemed always disposed to sleep, and spat out a considerable quantity of dark-colored shreddy secretion; and, on account of the pain it caused her, taking little except the medicines and wine.

On the 24th she was weaker and more oppressed; the temperature slightly raised, and the pulse 96. She was ordered to continue the medicine, and to be fed on arrowroot, milk, and brandy. She remained in the same condition, always sleeping a great deal, but taking little nourishment, on account of the pain it caused her, until the morning of the 26th, when her breathing became croupy, and the inspirations 22 in a minute, consisting of long deep-drawn inspirations, followed by rapid expirations. The temperature of the skin was increased, ***but the pulse remained at*** 96. She was also frequently sick, bringing up with anything she had taken pieces of shreddy excretion; but in manner she remained quite calm and sensible. It being impossible to feed her by mouth, she was ordered injections of beef-tea and brandy every three hours. She appeared in the evening somewhat revived, was able to take a little nourishment, slept quietly as night came on, but awoke at 2 A.M., struggled for breath, and died before any assistance could be fetched.

The post-mortem examination showed a deep ulcer on the right tonsil, extending to the posterior pillar of the fauces, covered by purulent secretion. The epiglottis was œdematous, and covered with a false membrane, which extended into the minutest ramifications of the bronchi, and which in the trachea could be peeled off in layers, but as it descended into the bronchi assuming more the appearance of a yellow creamy secretion; the mucous membrane lining the trachea and bronchial tubes was excessively congested, and had a velvety appearance.

THE USE OF CARBOLIC ACID.

Carbolic acid, sometimes in exact accordance with Professor Lister's method, and sometimes with modifications at the fancy of the surgeon, has now been pretty extensively tried in the various hospitals. It is probably as yet too soon for a very decided opinion to be pronounced upon its merits, but there has been sufficient time for a fair idea to be gathered of the class of cases in which its application is found either to be attended with manifest advantage, or to be apparently inert. We are making inquiries upon this point at the various hospitals, and the results we propose to record briefly.

At St. George's, Mr. Rouse tells us he finds the proportion of one part to forty of water too strong as an application for chronic ulceration of the legs. It appears to inflame the neighboring skin. He now orders a lotion composed of two drachms of carbolic acid to one pint of lead lotion, which he finds very useful. All odor is destroyed, the ulcer is stimulated to healing, and the skin does not suffer any irritation; on the contrary, it is rather soothed. The application surpasses the old unguentum viride, which St. George's men will remember as of great renown. Mr. Rouse has occasionally sponged the wound, in the operating theatre, before applying sutures, but not having found any advantage arise from it, he has discontinued the practice. He was much struck with the results in one case of compound fracture of the leg which was treated by Lister's method. The patient died four days after the accident of disease of the heart, but the wound being examined was found to be nearly healed.

As a lotion in chronic eczema, especially of gouty character, he finds the following very useful:—a drachm of carbolic acid with two drachms of lead lotion, one ounce of glycerine, and eight ounces of water. This stops smarting and itching in a remarkable degree. It should not be used where there is much inflammation.

Mr. Holderness, house-surgeon at this hospital, has given us a few statistics of his experience of carbolic acid, especially in the out-patient department. Of 26 cases of various lacerations and cuts, 7 united by the first intention; but these were all clean cuts. In no case of laceration was there primary union. They were all treated according to Mr. Lister's directions. In two cases of compound fracture of the tibia, out of 4 thus treated, he found the wound healed on examination. In one the dressings were removed on the 19th, in the other on the 21st day, and both patients quitted the hospital within a month.

CHARING-CROSS HOSPITAL.

A CASE OF PERIOSTEAL RHEUMATISM.

(Under the care of Dr. Salter.)

The following case, and that which we publish from the Farringdon Dispensary, furnish good examples of the beneficial influence of iodide of potassium upon patients whose ailments agreed in the circumstance of being periosteal, but differed apparently in their bases.

Harriet Q——, aged thirty-four, married; never had any children; had one miscarriage eight years ago, and no other pregnancy. Husband a very steady man, by occupation a hatter. The woman is pallid, thin, and cadaverous-looking. She enjoyed uninterrupted health till seven years and a half ago, when she had the small-pox. On first going out after her recovery she caught a violent cold, which gave her rheumatism in her head and neck, the pain being so severe that she was obliged to take to her bed again. It affected the scalp, forehead, and nape of the neck, and was of a gnawing character, with occasional stabs. The surface was excessively tender. From the head and neck it extended in a day or two to the shoulders and arms, which became the seat of equally severe pain, tender to the slightest touch, and quite helpless, so that she could not raise her hand to her mouth. In two months she was sufficiently well to get out, when she caught another cold, with the same result; but this time it fell upon the hips, thighs, and legs. As on the former occasions, it did not attack the joints particularly, but more the shafts of the limbs and the fibrous tissue of the muscles. She was confined to her bed for seven weeks; and the limbs were as painful, tender, and immovable as before. Then, for three or four months, she was pretty well, with occasional attacks of pain, for which she would take to her bed for a day; but the pain was nothing but what she could very well bear. She then experienced the severest attack she has ever had; it affected every part of the body, and confined her to bed for four months. It was during this attack that she first noticed the appearance of lumps in her head and forehead. They appeared on the spots of the greatest pain, and were so tender that, to use her own expression, "she was afraid of anyone coming near her." They were six or seven in number; they did not come out all at once, but in succession; they were fixed on the same spot when once they came out; they were considerably raised, those on the forehead being conspicuously visible; they appeared hard, and were about the size of a halfpenny. There was no redness. After remaining out for some time, the lumps in the head and forehead went away, for the most part, as she convalesced; but one of them remained, and has remained ever since. From the date of this first attack accompanied with these periosteal swellings, up to two years ago, she had five or six separate attacks, each attended with the appearance of fresh lumps on the scalp and forehead; between these attacks she partially recovered, but never completely, constantly suffering from pain. Three years ago similar swellings appeared on the shins, accompanied with the same aching, tenderness, and nocturnal exacerbations as those on the head. After a little time they went away; they then reappeared, and from that time they have never left her, varying from time to time in number, size, and painfulness, but never completely disappearing. Two years ago the same state of things appeared on the forearms, all along the ulna from the olecranon to the wrist. From the arms the lumps have completely gone away three or four times, and then come on again whenever she has had one of her rheumatic attacks. She has not lost them now for five months. The appearance of her arms and legs is very peculiar; they look as if they were affected by rickets, the ulnas appearing as if they were bent outwards and the tibiæ forwards; in fact, their cutaneous surfaces are one long node from knee to ankle and from elbow to wrist. The edge of the shin-bone and the sharp edge of the ulna have quite lost their original shape, seeming two or three times as thick as they ought to be, undefined, nodular, and uneven. They are acutely tender, and the aching pains at night almost entirely deprive the patient of sleep; indeed, for the last three or four weeks the pain has been constant, day and night.

Such was the patient's state on her admission into the hospital. She was at once put upon iodide of potassium (ten grains thrice a day) and a nightly sedative. Any local application was purposely avoided, that the effect of the internal administration of the iodide upon the local swellings might be the more clearly shown.

The effect was marked at once: the second night she slept, and the pain abated; more so the third night, and so on. By the end of a week she was easy, and the nodes were conspicuously subsiding in the arms, but less so in the legs. By the end of a fortnight the swellings in the arms were almost gone, and she was sleeping every night comfortably. The patient being virtually cured, and it being possible for her to continue the same treatment as an out-patient, she was discharged, as her bed was wanted for a more urgent case.

In relation to this case, Dr. Salter drew attention, in his clinical remarks, to the following point:—1st. The rheumatic nature of the affection. 2nd. Its almost exclusive periosteal seat. 3rd. That it issued in the production of true nodes, having all the anatomical characters of true nodes. 4th. The nocturnal exacerbations. 5th. The rapid cure by iodide of potassium. 6th. The resemblance of the case in all these respects to syphilitic periostitis. With regard to the first point, Dr. Salter based his opinion on the facts, that the symptoms first appeared, and afterwards reappeared, on exposure to cold, and just that kind of cold that is most fruitful of rheumatism—exposure after convalescence; that the pain was of rheumatic character; that the joints were, clearly at first, and now and then afterwards, to a slight extent involved; and that fascial and aponeurotic rheumatism with nocturnal exacerbations is a well-known and recognised affection. Moreover, there was not the slightest reason to believe that the woman had ever had syphilis. With regard to the three primary facts —the formation of true periosteal nodes, the nocturnal exacerbations, and the cure by iodide of potassium—Dr. Salter stated that he had seen numbers of similar cases, and that they have a well-marked individuality as a group. Their diagnosis from syphilitic periostitis is not always easy; sometimes it is impossible, and for this reason—that evidence of syphilis and evidence of rheumatism coexist, the symptoms not manifesting themselves till after both the morbid states have clearly shown themselves.

In such cases the state may be either complex or hybrid, or the symptoms may depend on the one or the other cause singly; the existence of syphilis not negating pure periosteal rheumatism, nor evidence of rheumatic tendency negating pure syphilis. Dr. Salter had, however, seen cases in which the manifestation of the symptoms seemed to depend upon a concurrence of the two causes, one apparently taking the place of a predisposing cause, and the other of an exciting cause. Thus he had seen rheumatic cases in which the rheumatism did not take on the periosteal form till after syphilis had been contracted, and cases of syphilis in which the periosteal affection did not show itself till the patient was thrown into the rheumatic conditions. One thing, however, was very satisfactory—that, however uncertain the diagnosis might be, there was no uncertainty about the treatment; iodide of potassium was the inevitable cure, to whichever cause, or to what proportion of either cause, the symptoms might be attributable. It was quite curious to see the way in which not only the symptoms, but the anatomical condition, yielded to the internal administration of that remedy in the present case. You could almost see the nodes subside from day to day; in one fortnight the ulnas, whose deformity on the patient's admission was so striking, had almost resumed their original shape.

Dr. Salter remarked, in conclusion, that he thought iodide of potassium was indicated in all cases of rheumatism, whether articular or otherwise, in which the pain was characterised by nocturnal exacerbations, and that we should not be far wrong in letting this single circumstance determine our employment of it.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

EPILEPSY IN A CHILD AFFECTED WITH CONGENITAL SYPHILIS; GOOD EFFECTS OF TREATMENT.

(Under the care of Dr. Radcliffe.)

We have seldom seen a case in which on the one hand, the disastrous results of inherited syphilis were more marked, and, on the other, the influence of treatment was more satisfactory, than in a little girl who was recently a patient of Dr. Radcliffe's in this hospital.

The patient, Jessie P——, was a girl ten years old, of cachectic aspect, who applied on April 27th, 1868, and was admitted into the hospital. Her mental condition appeared to be very satisfactory. The account given to us by her mother was that she had suffered from fits for the past twelve months. The fits recurred about every two or three weeks. In the fit, without any warning, she lost her senses, bit her tongue, and was much convulsed, remaining lost and bewildered for several hours afterwards. During this state of mental confusion she would drink, but refused food, and did not appear to recognise anyone. She had not suffered from worms. She had cough, and the breathing was found to be harsh.

It was noted that her voice was very hoarse, and this had been the case, her mother said, for three months. An offensive odor which pervaded her directed attention to her mouth and nostrils, and it was found that there was ulceration of the palate and uvula, swollen nasal bones, and ozæna. There was extreme tenderness to touch over the clavicles and shoulder-blades, and on the left shin there was a periostitic node. From these symptoms a syphilitic taint was naturally inferred, and on reference to the teeth the upper middle incisors were found to present in a most marked form the characteristic appearances described by Mr. Hutchinson. They were wedged-shaped, the border being deeply notched.

Inquiry was made as to the family history, which was as follows:—The father was described as very nervous and excitable. The mother had, eleven years ago, had ulcerated throat and an eruption over the scalp. She had lost four children; two at two months old, one at eleven months, and one at three years. Three of these children were born since the present patient, and one previously. A brother of the patient has paralysis, which occurred after scarlatina.

The girl, on admission, was put by Dr. Radcliffe upon full diet, and ordered a teaspoonful of cod oil three times a day, two drachms of syrup of poppies every night, and mercurial fumigations three times a week. These latter were applied by placing the patient in a common bath, into which a little hot water was momentarily turned in order to fill it with steam. In the bath five grains of calomel were placed on a tin saucer, and volatilised by means of a spirit lamp. The girl was placed in the bath, which was covered entirely by a thick blanket, so that she not only received the volatilised mercury upon her skin, but also inhaled it. She would usually suffer from irritating cough for about an hour after the fumigation. These fumigations were continued for three months: three times a week for the first two months, and afterwards once a week. The syrup of poppies, ordered on account of her cough, was taken for a fortnight, and then discontinued, as the cough ceased.

On the 7th of May she took her dinner and tea as usual, was lively and seemingly improved in health, played in the airing-ground until 7 P.M., and then complained of sickness. At 8 P.M. she was seized with epileptiform convulsions. Mr. Radcliffe, the medical superintendent, who saw her soon afterwards, describes the convulsions as very severe, and mainly unilateral in character, the right side being most affected. Blood came from the left angle of the mouth. At 9.45 P.M. she was apparently moribund. A sinapism to the abdomen was ordered, and ten grains of bromide of potassium to be taken every four hours. At midnight she had rallied, and she then gradually recovered her usual condition. The bromide was continued twice daily until August, for the last six weeks of this time twenty grains being given instead of ten grains for a dose. The ulceration about the fauces was treated locally with Condy's fluid. Early in August the skin on the left side of the nasal bridge was observed to be red and swollen, and in a few days it had ulcerated quite through. At this time a drachm of the solution of bichloride of mercury and three grains of iodide of potassium was commenced to be given three times a day, and, in addition to her full diet, extra milk was ordered, and two ounces of rum daily. Under this treatment she improved rapidly. There was no recurrence of fits; and on Sept. 21st she was sent to Ramsgate. At that time the ulcerated opening in the bridge of the nose, and the ulcers about the fauces, had healed, and the girl's general condition was vastly improved.

She stayed at Ramsgate for a month. During that time she had one fit, which is described as of very severe character—indeed, it would seem that she was again moribund in appearance. On her return from Ramsgate she appeared in excellent health and condition. The tenderness about the clavicles, &c., the node, ulcerations in the fauces and nose, had all vanished, and her appearance generally offered the most striking contrast to that which she had presented on admission to the hospital six months previously.

It is noteworthy, that, under specific treatment addressed to the cause of her malady, she had but two fits during six months, having, previously to admission, suffered from one every two or three weeks for a twelvemonth. She continues now under treatment as an out-patient.

◆

MIDDLESEX HOSPITAL.

EMPLOYMENT OF CARBOLIC ACID.

THE lotion of carbolic acid of the Pharmacopœia of this hospital is made by mixing half a fluid ounce of carbolic acid with one pint of distilled water. As an ordinary lotion, it is the most frequently prescribed, probably, of any of the lotions in common use for dressing wounds and sores, healthy or unhealthy. There is another lotion of somewhat similar chemical effect, preferred by some of the surgeons for unhealthy sores—namely, the lotion of chloride of zinc. This is of the strength of one grain of the chloride of zinc to the ounce of distilled water. These lotions, of the above-named proportions, are used, in the first case, with a view quite different from that entertained by Professor Lister, and, in the second case, from that of Mr. De Morgan, whose treatment by very strong solutions of chloride of zinc we have already referred to on more than one occasion.

We were lately shown by Mr. Nunn the result of a very simple experiment. About a drachm of pus, containing a little blood, was mixed with an ounce of water. This having been distributed, in equal quantities, in three test-tubes, to one was added a drachm of the carbolic-acid lotion, to a second a drachm of the chloride-of-zinc lotion, while the third was left without any admixture. The mouths of the tubes were lightly covered with paper, and the tubes were placed in a moderately warm situation. As might have been anticipated, the tube containing no antiseptic speedily betrayed evidences of putrefaction; but in neither of the other tubes was there any appearance of decomposition after weeks had elapsed. In the tube containing the carbolic acid, the coloring matter of the blood was acted on in a different manner from that which was to be observed in the tube containing the chloride of zinc.

The action of carbolic acid and of chloride of zinc upon albuminous fluids is analogous, if not identical. Both these substances seize on the albumen and combine with it, producing a new chemical compound having the very opposite quality to moist albumen itself—that is to say, having no tendency to undergo change. Many other salts have the same power of thus combining with albumen; but none so little objectionable as the chloride of zinc. The creasoting and the kyanising of timber for railway sleepers and other situations exposed to damp and insects, has, we believe, for its object the coagulation, so to speak, of the vegetable albumen of the wood by creasote and bichloride of mercury respectively, preventing in this way the decomposition of the most decomposable constituent of the timber.

The use of carbolic acid in this hospital is, we are told, by no means of novel introduction, Mr. De Morgan having long ago employed it as a detergent; while the weak lotion of chloride of zinc was first used at King's College Hospital by Professor Partridge, and introduced into the Middlesex Hospital Pharmacopœia by Mr. Nunn.

As with all disinfectants, considerable misconception appears to exist with reference to the powers of carbolic acid. It is practically useless, if not absolutely so, to sprinkle the floor of a ward with a solution of chloride of zinc, and it is only by contact with the albuminous material that carbolic acid will act as a purifier. At the Middlesex Hospital the surgeons insist on the most careful and continuous application both by dressing and syringing. Mr. Nunn frequently orders carbolic acid lotion to be applied by means of a *modification* of Dr. Richardson's spray-producer, it being found that the spray from the unmodified instrument causes a too painful sensation of cold.

◆

BELGRAVE HOSPITAL FOR CHILDREN.

TWO CASES OF EXCISION OF THE HIP.

(Under the care of Mr. PICK.)

EXCISION of the hip is an operation respecting the value of which very considerable difference of opinion exists; but in the two following cases there can be little doubt that it was the proper course to pursue, inasmuch as the limb was entirely useless, and there was a progressive deterioration of the general health, and at the same time, as far as could be ascertained, an entire absence of all visceral mischief. Moreover, in consequence of the advanced state of the disease, there was little probability of a spontaneous cure taking place; and even if this were likely to ensue, the limb would have been a less useful one, on account of the dislocation, than was obtained by removing the head of the bone.

CASE 1.—Maude B——, aged eleven, was admitted on August 1st, 1867. The history was that she had always enjoyed good health until six years previous to admission, when, after an attack of scarlet fever, she began to develop all the usual symptoms of hip disease. The disease was, however, very chronic, and she continued under treatment, at intervals, until two years ago, when abscesses formed, which have continued to discharge. Since the formation of matter, her general health has gradually deteriorated. On admission she was found to be a strumous child, with fresh complexion and thin hair. Attempts to semiflex and rotate inwards the left thigh caused intense pain. There was about an inch and a half of shortening, and evidently displacement of the head of the bone, for it was found that the trochanter lay almost entirely above a line drawn from the anterior superior spine of the ilium to the lower border of the tuberosity of the ischium. Upon rotating the bones upon each other, under the influence of chloroform, distinct crepitus could be detected. In front of the joint, about the position of the insertion of the psoas muscle, were two sinuses, which led down to exposed and softened bone. There was no cough, and the chest-sounds were healthy.

On August 12th, the patient having been placed under the influence of chloroform, a single long incision was made just behind the great trochanter, and the head of the bone freed from its attachments with the point of the knife. In doing this a large abscess was opened, and a quantity of matter escaped. The bone was now divided by means of a saw just below the trochanter. The wound was brought together with a single suture, and the limb put up on a long interrupted splint. The head of the bone, on being examined, was found entirely separated from the shaft, and was the size of a marble, much softened and carious. The trochanter was also much diseased. The acetabulum was apparently healthy.

After the operation the girl went on well. On the sixth day the splint was removed, and the limb simply placed between two sand-bags, with a weight attached to the foot.

On Aug. 26th the wound was quite clean and healthy, and beginning to fill up rapidly from the bottom. One of the sinuses healed at the end of six weeks, and at the end of eight weeks there was some amount of union, and she was allowed to get up. Her recovery was somewhat retarded by a little piece of dead bone in the other sinus, which was, however, eventually got rid of. When she was discharged on Dec. 9th, there was about one inch of shortening, the limb was in good condition, and she could bear the weight of the body upon it.

She was seen on Sept. 4th, 1868, when she was found to have gained flesh and grown considerably. She could walk a couple of miles without any support. There was exactly one inch of shortening; there was firm union and perfect motion in every direction. The limb, which previously had been much wasted, was now nearly as plump and firm as the opposite one.

CASE 2.—Henry H——, aged five, was admitted March 19, 1868. His mother stated that two years ago he fell down while running, and from that time was noticed to constantly limp. He then complained of pain in his left knee; followed, in a few months, by pain in the hip and down the thigh. Fifteen months before admission an abscess formed; this was opened, and had been discharging ever since. About the same time that matter formed, the right knee became "enlarged and stiff," and the leg flexed on the thigh; so that from that time he has been unable to walk at all.

On admission, he was found to be a scrofulous looking boy, but fairly nourished. The left hip-joint presented the characteristic appearances of advanced morbus coxæ; the thigh was flexed on the pelvis, and fixed in that position; there was extreme wasting of the muscles of the buttock, and the head of the bone could be felt to be displaced and lying on the dorsum of the ilium. The thigh was shortened to the extent of an inch. On its outer side were two sinuses, running upwards in the direction of the joint, and leading down to carious bone. The ends of the tibia and femur on the right side were much enlarged. The knee was semiflexed, and anchylosed in this position. There was no cough, and the chest-sounds were natural. The urine was healthy, and contained no albumen.

On the 16th of April excision was performed in the ordinary manner by the longitudinal incision behind the trochanter. The head was found resting on the dorsum of the ilium, much diseased, the cartilages having vanished, and the bone being eroded and softened. The acetabulum was also much diseased, and a piece of bone, the size of a hazel-nut, was lying loose in the cavity. The limb was put up on an interrupted long splint.

The boy went on well after the operation, and the wound soon began to heal. On the 20th of May both the original sinuses were closed, and the wound was quite healthy. The splint was now removed, and extension made by a weight and pully, the limb being supported by sand-bags. In the beginning of July the wound was all healed, except a minute sinus, which discharged a little thin sero-purulent fluid. He was allowed to get up, having been fitted with a leather splint. He was discharged on the 3rd of August, and sent home again into the country. There was then about an inch of shortening. The ends of the bones were firmly united, and there was free movement in every direction. He could walk on the left leg with the help of two crutches. In consequence of the disease in the left knee he was unable to put this limb to the ground.

FARRINGDON DISPENSARY.

A CASE OF ACUTE SYPHILITIC PERIOSTITIS, OCCURRING IN THE EPILEPTIC DIATHESIS; RECURRENCE OF FITS; SUCCESSFUL TREATMENT WITH LARGE DOSES OF IODIDE OF POTASSIUM.

(Under the care of Mr. CHARLES JOHN SMITH.)

M. S——, a married woman, aged twenty-eight, came under treatment on October 19th, with acute periostitis. Her history was purely syphilitic: she had "sores and buboes" within a month after her marriage; secondary symptoms showed themselves in about two months; she had "eruptions of brownish spots," and sore throat; her hair came off; she had pains in all the limbs, and two attacks of iritis. She said that six months ago her right arm was painful, and began to swell; three months later a swelling, accompanied by pain, appeared on the right collar-bone. After a time she went to a chemist, who gave her some pills, under which she got rapidly worse, her throat, mouth, and gums becoming dreadfully sore: so she came to the Farringdon Dispensary. Mr. Smith found her profusely salivated, and the breath very fetid; the arm very hot, very tender, and much swollen—in fact, acute periostitis, extending from the lower third of the humerus to half way down the ulna. At the sternal end of the clavicle was a node, the size of half a small orange, hard, hot, and very tender. She said that for nights she had had no rest, owing to the agonising nature of the pain. She was ordered chlorate-of-potash gargle, ten grains of Dover's powder at bedtime, and iodide of potassium. The effect of this treatment was most marked. She at once obtained a good night's rest, the salivation speedily subsided, the arm and clavicle rapidly improved, pain ceasing almost entirely in a few days, and in ten days nearly all trace of periostitis had vanished, scarcely any thickening to be noticed in the arm, while the clavicular node was painless and about half the size.

On November 16th she declared herself "nearly well." The treatment will, of course, be continued for a time. At first she took six-grain doses of the iodide, but in the course of a day or two it was raised to fifteen grains three times daily. After being under treatment for a few days, she complained of having had something like *petit mal*, and it was found that twelve years ago she had had very violent fits of a true epileptic character, but as soon as menstruation was properly established the fits ceased. She had no return of them until last June, when, always preceded for half an hour by giddiness, she suffered from them two or three times a week, and so up to the time of coming under treatment at the dispensary. There has been no fit since.

This case, Mr. Smith remarks, appears to present several interesting features. First, it was no doubt in the outset an ordinary case of chronic periostitis, much more usually the form met with, at any rate of late years. Secondly, it manifested the baneful influence of mercury, by which he believes the severity of the attack was determined, and acute inflammation set up; next, occurring in the epileptic diathesis, it excited a return of epilepsy, after a lapse of twelve years; and then it furnishes an excellent example of the wonderful effect, and rapid effect too, of iodide of potassium, the value of which in the treatment of syphilis must soon, he thinks, become universally admitted, to the total exclusion of mercury. It certainly appears important to give large doses of this drug; nor does there seem to be any reason to hesitate for fear of depressing the patient; the lowering tendency of iodide of potassium has been greatly exaggerated. At any rate it may safely be said that the tolerance of large doses is fully equal to the tolerance of small; and he does not remember any cases the worst for it, where the necessity for its use was apparent.

KING'S COLLEGE HOSPITAL.

On Saturday, 28th November last, the following operations were in the list for performance by Sir William Fergusson:—Two amputations of the thigh; two operations for cleft palate; removal of fatty tumour from the neck; for onychia; division of nerve for tic douloureux; besides an operation by Mr. Henry Smith. The light was at times most unfavorable, but nevertheless a great part of the list was got through, though when we left at four o'clock there was still a tumour or so waiting to be cut out. We witnessed, so far at least as such an operation *can* be seen by a bystander, the closure of the cleft palate in a lad upon whom Sir William had operated unsuccessfully two years ago, the two amputations, and the operation for tic.

The amputations of the thigh were both interesting. In one case the patient was a man past the middle period of life, who had been renowned for agility, and who had more than once saved life by jumping into the water and swimming to the help of a drowner. Five years ago he strained his left knee, and shortly afterwards noticed a swelling about the upper and back part of the leg, which went on increasing in spite of treatment. At the time of operation there was a large hard tumour (osteo-sarcoma), involving all the upper part of the tibia, and possibly of the fibula, and extending a short distance up the femur. The limb was rigidly flexed, and the joint had the appearance of being dislocated. Sir William removed the limb by quadrilateral flaps, including muscular tissue, and remarked that the mode of amputation was a composite one, to which no particular name could be given. He thought the point after all was to get a convenient covering to the bony stump, and this was best attained by different methods in different cases. The amputated limb was not then examined, but put aside for careful dissection.

The other case was that of a cachectic lad, along the track of whose right femur were numerous apertures of sinuses discharging pus, and whose knee-joint apparently contained matter. It was the old story: the boy had had periostitis three years ago, followed by necrosis. The limb was amputated by the ordinary flap operation at the upper third of the femur; Sir William Fergusson remarking that the case was one in which formerly, and perhaps even in the present day, amputation at the hip-joint might have been thought necessary, so high up did the disease appear to extend. He felt sure, however, that the thickening in the part of the femur left behind was simply from new bone; and it was manifestly very important to avoid, if possible, the more formidable operation. Mr. Henry Smith thoroughly controlled the femoral artery in both these cases with his thumbs.

In the case of an elderly man who had suffered from tic for several years past, the inferior dental nerve of the right side was divided. Stretching the lips asunder with two fingers of the left hand, and feeling for the mental foramen with one of these, Sir William cut down upon the nerve with a small tendon knife, which he passed quite into the canal. He had performed a similar operation four months ago, and it was followed by relief for several weeks. It is not Sir W. Fergusson's experience that there is any advantage, as supposed by some, in removing a portion of the nerve: simple division does quite as much good. The relief is always temporary: at least he has met with but few exceptions to this rule. It is noteworthy that it often happens that no relief is obtained for the first week after the operation; then the pain gets gradually less, and the patient may be free perhaps for three months. As a general rule, the oftener the operation is repeated, the shorter is the period of immunity procured by it. This man, it should be said, had been under every variety of treatment without effect.

THE USE OF CARBOLIC ACID.

It is interesting to note the various opinions, and still more curious to observe the differing experience, in reference to the use of carbolic acid in surgery. We briefly record to-day results of some further inquiries upon this point in metropolitan hospitals.

At *St. Bartholomew's* Mr. Paget does not as yet feel able to form an opinion on Professor Lister's mode of using carbolic from any observations of his own. In the few cases in which he has tried it, it has been useless; but this may possibly have been Mr. Paget thinks, from some error in the mode of application. He intends to make further trial of the agent.

Mr. Holmes Coote has found carbolic acid very useful as a caustic in the treatment of syphilitic sores, mucous tubercles, &c., as well as generally in foul wounds. He does not approve of Lister's method, which he considers meddlesome. Mr. Coote's experience is that wounds unite readily when left alone.

So again at *Guy's.* Mr. Birkett tells us that he has not had much experience of carbolic acid. He finds his cases do very well on the usual plan.

On the other hand, Mr. Bryant, at the same hospital, gives a more favorable opinion of the substance. He is giving Lister's plan of the treatment of wounds a good trial, and for some months has been washing out all wounds made by operation with a watery solution of carbolic acid, and dressing them with a solution of the same acid in olive oil. Mr. Bryant says that his operations have also certainly done well, for he has in some cases primary union of the wounds, whilst in others there has been little or no purulent discharge. How much of such success depends upon the plan of dressing, however, he cannot say, for he has at the same time applied torsion to all vessels, and used sutures as little as possible. He has also followed the practice, which he has adopted for some years, of applying firm pressure to all wounds by means of pads of lint and strapping. Upon the whole the results have been good, and he is disposed to attribute them in a great measure to the use of carbolic acid. The strength of the watery solution employed by him is one part in thirty; of the oily, one in ten.

Provincial Hospital Reports.

STATE CRIMINAL ASYLUM, BROADMOOR, BERKS.

A CASE OF GENERAL EMPHYSEMA FOLLOWING RUPTURE OF THE STOMACH; DOUBLE INTUSSUSCEPTION OF THE ILIUM.

THE following case, which presents many features of interest, is related by Mr. A. J. Newman, assistant medical officer. Attention is directed to the remarkable absolute and specific brain weights, the large size of the stomach, the presence of two examples of intussusception, and, lastly, the supervention of general emphysema, due, as Mr. Newman believes, to the escape of air from the enormously distended peritoneal cavity.

S. R——, aged thirty, male, died on November 25th, 1867. He was admitted to Broadmoor in 1865, having been found insane on arraignment upon a charge of murder. During his residence in the asylum he was in a state of chronic mania, low-spirited and irritable, an enormous eater, seldom employing himself, and prone to strike without previous warning anyone within his reach. Had been deaf for the last fourteen years, and was said to have been an inmate of St. George's Hospital when a child for a blow on the occiput with an oyster shell.

History of the illness.—About eighteen hours before death he was seized with violent vomiting, followed in about fourteen hours by great tympanitic distension of the belly, and collapse. The tympanitis gradually increased, and became at last very marked. About half an hour before death emphysema was observed about the neck and right arm. This gradually extended to other parts of the body, and even after death it increased a little.

Autopsy twenty hours after death.—Weather dry; temperature 40° F. Cadaveric rigidity and discoloration are well marked. There is general emphysema of the surface of the body, with the exception of the left forearm and the legs below the knees. The scrotum is as large as a man's head, and is semi-transparent and tympanitic; the penis is obliterated; the abdomen is greatly tympanitic; the bones of the head are thick, and bear no scar or sign of fracture.—Brain: Dura mater slightly adherent to clavaria and left hemisphere; pia mater strips with difficulty; the grey matter of convolutions is very thin, firm, and dense in structure. The absolute weight of the brain is unusually high, and so are the specific weights. The former is 53¾ oz. The absolute weight of the white matter of the convolutions is 10·43 oz., and of the grey matter 10·35 oz. and 10·37 oz., and on the left and right hand side respectively in the frontal region, and averaged 10·39 oz. in four separate weighings of the more posterior portions.—Spinal cord: Grey matter firm, small in quantity, and light in color. The specific weight of a section in cervical region is 10·39 oz.: in dorsal and lumbar regions 10·38 oz. —Chest: Left pleuræ firmly adherent for a small space in the subscapular region, and the lung opposite rather hepatised in character. The aorta contains numerous small atheromatous deposits. Other organs healthy.—Abdomen: Contains a large quantity of flatus (external to intestines), and a considerable amount of reddish brown fluid mixed with flocculent matters and particles of food. Two examples of intussusception of the ileum are observed about the centre of the cavity, lying transversely, and in juxtaposition (one beneath the other). Each invagination is to the extent of about two inches, the enwrapped portions of intestine not tightly held nor much discolored, and can easily be drawn out. They are about eighteen inches apart, and the first is sixty inches from the duodenum. The intestine between the invaginated portions is empty; above it is distended with food and air; below flaccid, and containing only a little chylous matter. Large intestine healthy; nowhere in peritoneal cavity, or in intestine, is there observed any deposit of lymph or great discoloration, but there are some long, dark, irregular marks, apparently slight abrasions, in the parietal portion of the peritoneum, low in the iliac region on each side. The stomach contains a good deal of food, and is much enlarged, measuring at its greatest curve 27¼ inches. In the line of this curve, and at about three inches from the œsophageal orifice, there is a ragged opening about half an inch in circumference. The coats of the stomach are dark and extremely thin, and at some places at the larger end of the organ the internal coat is abraided. The left kidney is large and pale, and has an adherent capsule. The other organs of abdomen are apparently healthy.

Cases of general emphysema are comparatively rare, and are always interesting. The great distension of the abdomen in the case of S. R—— came on only a few hours prior to dissolution, and the sudden advent of the emphysema just previous to death would suggest the giving way at that moment of some part of the peritoneum, most probably at the seat of discoloration and apparent abrasion. The long-delayed collapse would lead one, Mr. Newman says, to conclude that the rupture of the stomach only occurred a few hours before death. Following the rupture came the double invagination of the gut, most probably caused by the sudden increase of peristaltic action due to the presence of the foreign matter poured into the peritoneal cavity through the rent in the stomach.

Medical Societies.

JANUARY—FEBRUARY.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

MR. SAMUEL SOLLY, F.R.S., President, in the Chair.

ON EXCISION OF THE LARGER JOINTS; WITH A TABLE OF CASES.

BY HENRY LEE, F.R.C.S.,

Surgeon to St. George's Hospital.

THE author gives a table of twenty-two cases in which excision of one of the larger joints was performed. The table includes three cases of resection of the head of the femur, and twelve cases of excision of the knee-joint. Out of the twenty-two cases death occurred in two cases only—namely, in the eleventh and fifteenth. In both of these diffuse suppuration in the cancellous structure of the bone had taken place. The author attributes the successful results obtained to the accidental circumstance of his having had a large proportion of cases in which the ends of the bones had been consolidated by previous inflammation, caused either by the presence of a piece of dead bone or by an abscess; and also to the fact of a large proportion of the cases of resection of the knee-joint having occurred in children. He considers that before the epiphyses are united to the shafts of the bones resection of the knee may be performed without injury to the cancellous structure of the long bones, and that in such cases, as well as where the cancellous structure has been previously consolidated, the great danger arising from purulent infiltration of the shafts of the bones is, in a great measure, avoided. The table presented is exclusive of a case of disease of the hip, and one of disease of the knee, in both of which immediate amputation was performed, as it was found during the operation that the bones were too extensively diseased for the operation of excision.

THE RESULTS IN THIRTY-NINE CASES OF EXCISION OF THE KNEE.

BY PROFESSOR HUMPHRY, M.D., F.R.S., CAMBRIDGE.

This paper was a supplement to one published by the author in the "Medico-Chirurgical Transactions," vol. xli., in which thirteen of the cases are related. Most of the remarks in that paper have been corroborated by his subsequent experience. The cases were all treated in Addenbrooke's Hospital. Twenty-eight recovered, gaining firm, sound, and useful limbs; two died, one from an attack of hæmatemesis, which seemed to have no particular relation to the operation; nine underwent amputation, of whom five recovered and four died. The operation was, in most instances, performed on account of synovial disease with ulceration of the cartilages and the bones, destroying the joint so as to leave no hope of its recovery to usefulness. In some it was performed for the purpose of removing a crippled useless joint from which the disease had subsided. The clean cut surfaces of the tibia and femur, if placed in good apposition and kept at rest, were commonly found to unite quickly and form a firm basis of support, so that the patient was able so walk, run, and work well; and there has been no liability to return of disease at the part in any of the cases. The limb should be kept straight; but even in the instances in which it became bent it was still very strong and useful. In the young subject, if the epiphysial, or growing, lines of the femur and tibia are left uninjured, the limb may keep pace in growth with the other limb, and generally does so, or nearly. In the cases in which the operation did not succeed the failure was generally due to continued suppuration in scrofulous or unhealthy persons.

Professor Humphry makes a single external semilunar incision across, beneath the patella, is careful to remove all the diseased bone and to leave the cut surfaces of the tibia and femur in good apposition, having taken pains to secure the bloodvessels by torsion. He pays great attention to the adjustment of the limb, in the first instance, with splints and bandages so arranged as to leave the line of incision exposed, and is very unwilling to disturb the parts afterwards. He, not unfrequently, allows an interval of five, and six, or more weeks to elapse before he removes any of the bandages, thus securing primary union throughout the wound, or great part of it, in several instances. He does not allow the patient to leave the bed till firm union of the bones has taken place.

The President found that, with greater experience, his love for excision of the knee had increased. He alluded to the propriety of re-excising in cases of failure to procure perfect union. In one case he had found this practice recommended by Sir William Fergusson, very efficacious.

Dr. Marston said that Dr. McKinnon, of Netley, recently excised the wrist by Lister's method with the best results. During the Crimean war there were few excisions, but after the New Zealand war six cases of resection of the head of the humerus came to Netley, which did well. Some were done by a single, and others by a horseshoe incision, and the former were by far the more satisfactory. He thought it would be well in children to remove the epiphysis, and avoid opening the cancellous structure.

Mr. Barwell thought excision of the hip was often delayed too long. Under these circumstances a pelvic abscess began to form, and in these cases he excised the head of the femur, and perforated the acetabulum to evacuate pus. The shortening of the limb in hip disease was due in great part to the adduction of the limb, and he thought it very advisable to abduct the limb after excision. He asked Mr. Lee what advantage was gained in one of Mr. Lee's cases by amputating at the hip-joint.

Mr. Skey said it was pleasant to hear of these great successes in surgery; but, with every deference to the opinion of those who favored excisions, there were certain difficulties which occurred to his mind when Mr. Humphry's first paper was read, and which was still present. He could not understand how thirty-nine cases could be produced from a provincial hospital, while a large metropolitan hospital could not equal them. He would venture to say he (Mr. Skey) would not have concurred in the propriety of excising in a number of these cases. He was a pupil of Abernethy, and he did not believe that in his time there were more amputations than at present. Mr. Lee had referred to the case of Mr. Jones, of Jersey; he thought that that gentlemen attributed much of his success to after treatment, and he regretted that the authors had confined themselves to the mechanical treatment.

Mr. Thomas Smith said all surgeons must be conscious that excision of the knee was injured by the enthusiasm of early operators. Professor Humphry's experience was long enough to speak of, but other surgeons were reticent because a sufficient period had not elapsed. In reply to Mr. Skey, he thought that St. Bartholomew's was intensely conservative, and not apt to take up new methods. Mr. Skey and his colleagues had resisted the operation, but at the present time all the surgical staff performed excisions. The number was greater than Professor Humphry's, and the success equal. He had had fourteen cases of excision of the knee himself, with only two deaths.

Mr. Maunder said Mr. Lee thought it was often a question between amputation and excision; but he thought that if there were any doubt it must be a case for amputation. It was only in cases of chronic disease, when the question lay between simple treatment and excision, that the question of the latter should be entertained. When there was necrosed bone excision would be advisable. He thought the local treatment was most important, and the simpler the better; and he preferred the plaster-of-paris splint.

Mr. John Wood said he had the opportunity of watching the cases in King's College Hospital. He begged to inform Mr. Skey that in all cases operated on in that hospital, constitutional treatment had not been neglected; but in gelatiniform disease of the knee no such treatment was of avail. Many of these cases had been treated elsewhere for a long time, and many of them had been condemned to amputation in St. Bartholomew's. He believed that the majority of cases of disease of the knee in which amputation of the thigh would be recommended, would do better with excision. With regard to the propriety of re-excising unsuccessful excisions, he had seen great success, and he believed that many so-called unsuccessful cases of excision which had been amputated might have been saved by this proceeding.

Mr. Lee in reply said that he had re-excised in one instance with good result, and that the case of amputation alluded to by Mr. Barwell was not included among the excisions. He would, in reply to Mr. Skey, say that those who give themselves to a subject have cases sent to them, and this would account for one surgeon having more than another. Many of his cases would ten years ago most certainly have been submitted to amputation. The morality from amputation and from excision was supposed to be equal, but he thought that with proper selection the mortality of excision would be much less than after amputation. The principal point was whether the cancellous structure was so condensed as to obviate pyæmia. In one case, however, he found the epiphysis infiltrated with pus, which extended to the shaft. This was, however, exceptional.

Professor Humphry said the danger of interfering with cancellous bone was exaggerated. His object was to avoid the shaft of the bone, and he thought the induration of cancellous structure rarely took place. He thought it most advisable to cut through the epiphysis, and not to remove the whole of it. He deprecated *nimia diligentia* in all cases of wound, and he allowed no interference with the splint in excision of the knee, and would prefer to leave it altogether alone. He regretted that Mr. Skey had contrasted Addenbrooke's with St. Bartholomew's, for he was an old pupil of the latter. He had found at Cambridge a large number of chronic knees, which were always on hand, and he regarded time as an important element in a working man's life. In these cases excision was the best practice, and so also when the health was suffering from constant discharge. He used no constitutional treatment after an operation, but let the patient alone.

Mr. Skey would put one question to Mr. Humphry: Is excision more suited to disease of the the synovial membrane or of the bone?

Professor Humphry asked, in reply, whether strumous disease of the bone ever occurred without disease of the synovial membrane.

Mr. Haynes Walton exhibited a patient from whom he had removed a large Elephantiasis of the Scrotum ten years back, and who was now in perfect health.

ON CERTAIN POINTS IN THE PHYSIOLOGY AND PATHOLOGY OF THE FIFTH PAIR OF CEREBRAL NERVES.

BY JULIUS ALTHAUS, M.D., M.R.C.P.,

Physician to the Infirmary for Epilepsy and Paralysis.

THE author introduced his subject by some remarks on the physiology of cerebral nerves generally, saying that the only two pairs of nerves the function of which was not yet accurately determined were the pneumogastric and the fifth, both of which were endowed with far more complex functions than the rest of their fellows, and were also less subject to disease, without simultaneous lesions of important neighboring organs. We had therefore, until now, been obliged, with respect to them, to trust almost exclusively to one of the two sources of our knowledge as regards nervous function—namely, the results of vivisections in animals; while the corrective influence of pathological observations had been wanting. Dr. Althaus then gave his reasons for considering the evidence derived from pathological cases, occurring in otherwise healthy adults, superior to that merely deduced from vivisections; and proceeded to give the details of a very curious and, as it appears, unique case of total loss of function of the whole fifth pair, unaccompanied by any other affection of cerebral or nervous matter, and which could be looked upon, in a certain sense, as a complete physiological dissection of the fifth nerve. The case occurred in an otherwise healthy Australian sheep-farmer, and was due to exposure to cold. There were at first symptoms of inflammation, and afterwards compression and atrophy of the nerve. The case came under the author's care about two years after the commencement of the affection. There was then total loss of muscular sensibility about the face, and a peculiar expression of the features in consequence of it. Vision was obstructed by leucoma of both corneæ; yet the patient suffered much from photophobia, although very little light could penetrate to the retina. An ophthalmoscopic examination of the fundus oculi showed the optic disc, as far as it could be seen, quite normal. The common sensation of the face and scalp was entirely lost in both sides. The sense of temperature was completely absent, and the senses of touch and locality were also lost. The conjunctiva was anæsthetic, the secretion of tears arrested, but there was pathological hypersecretion of conjunctival mucus. The mucous membrane of the nose was quite insensible, and its secretion much augmented. The sense of smell was in no way impaired. The mucous membrane of the mouth, including the tongue, was also anæsthetic. The secretion of saliva was arrested, but the flow of buccal mucus increased. The tongue had been severely bitten, as the patient was not at all aware of biting it whenever he did so. The sense of taste was preserved. The muscles of mastication were paralysed; and the patient complained of a rushing noise in the head, which was probably due to paralysis of the tensor tympani muscle, which is animated by the minor portion of the fifth nerve. The sense of hearing was normal, and there were no other morbid symptoms. The author therefore concluded that the pathological lesion was confined to the course of the fifth nerve between the pons Varolii and the Gasserian ganglion. It could not be more peripheral, because not a single fibre of the trifacial nerve had escaped the injury; and it could not be more central, because there was no symptom of disease of the pons. The treatment consisted in the systematic application of the continuous galvanic current. No medicine was given. After three months' treatment the patient was considerably improved in every respect, and his sight so much better that he could again guide himself in the streets, and follow a light occupation.

Dr. Althaus concluded his paper with some remarks on various points in the physiology and pathology of the nervous system which were suggested by the phenomena observed in this case. 1st. Alluding to the researches of Magendie and Claude Bernard, who had endeavored to prove that the olfactory was not the only nerve of smell, but that the fifth had a great deal if not everything to do with it, the author considered his case to prove the contrary. 2nd. Photophobia in this case had evidently little or nothing to do with the condition of the optic nerve or the retina, but was a neurosis of the corneal branches of the fifth nerve, and cured by galvanisation. 3rd. The question whether the sense of taste was dependent upon the glosso-phuryngeal nerve, or upon the lingual branch of the fifth, was one about which the greatest discrepancy existed amongst the best observers. The author thought his case proved that, although the special sensation of taste was due to the glosso-pharygeal, yet the quickness of its perception was, in the anterior part of the tongue, materially enhanced by a normal condition of the fifth pair. 4th. The special kind of nervous influence by which the secretion of the mucous membranes of the eye, nose, and mouth was *excited*, and by which it was *regulated*, had hitherto not been investigated. Ludwig had shown, with regard to salivary secretion, that branches of the fifth were the exciting, and sympathetic fibres the inhibitory, nerves. The author thought his case proved that just the reverse obtained as far as the secretion of conjunctival, nasal, and buccal mucus was concerned; and that for this latter function the sympathetic was exciting, and the trifacial inhibitory. 5th. The pathology of tinnitus aurium was obscure. The author believed it to be, if not always, at least frequently, a symptom of neurosis of the fifth nerve. 6th. The present case seemed to settle the question as to the precise way in which the continuous galvanic current acted on the nervous centres. Dr. Althaus had always thought that the galvanic impression was reflected from the peripheral branches of the fifth to the base of the brain. This was now proved to be correct; for it appeared that when the reflex function of the fifth pair was in abeyance, no cerebral symptoms could be produced by the application of a powerful current to the head or face, although the physical relations of the skull, brain, and bloodvessels had not been altered. The transmission of the continuous galvanic current to the brain was therefore effected, not physically, but physiologically, by nervous influence.

After a few words of general commendation from the President,

Mr. Carter asked for information with regard to a case of insensitiveness of the fifth pair related by Duchenne. He also observed that the dependence of photophobia on the fifth pair, its independence of the retina, and its curability by galvanism, had long been known to ophthalmic surgeons; and added that ophthalmic practice afforded daily proof that irritated conditions of the fifth were formidable obstacles to the nutrition or repair of the tissues supplied by the irritated filaments.

Dr. Anstie called attention to the fact that the changes in the case related by Dr. Althaus were similar to those recorded by himself and others in cases of severe neuralgia, and remarked that this resemblance between secondary effects was suggestive of a more intimate relation between pain and anæsthesia than was commonly recognised. He did not think the negative evidence of Dr. Althaus's case sufficient to prove that the fifth pair did not influence the nutrition of the hair, and cited cases, his own amongst others, in which temporary grayness had been produced by neuralgia.

Mr. Soelberg Wells referred to the differences of opinion as to the cause of the corneal mischief in such cases: one view being that it was due to impaired nutrition; another, that it was due to the unfelt irritation of foreign substances. He described the experiments of Snellen and Meissner.

Mr. Savory considered that the paper would hereafter be regarded as one of the most important and valuable ever read before the Society. He referred to the question of taste and smell; and enlarged upon the importance, for the discharge of nervous function, of a healthy condition of the tissue surrounding the peripheral extremities of the nerve.

Dr. Broadbent thought the case showed rather that photophobia was independent of the fifth nerve than dependent upon it.

Dr. Russell Reynolds described a case of partial loss of function of the fifth nerve of one side only. In this patient there was the statuesque expression described by Dr. Althaus, the sense of smell was perfectly retained, and there was excessive discharge from the mouth.

Dr. William Ogle took exception to two points in the paper. He did not see how an intracranial affection of the fifth pair could possibly arrest the formation of saliva, because the nervous supply of the parotid gland, although derived through the auriculo-temporal branch of the fifth, comes in reality from the seventh, through the small petrosal nerve, which joins the auriculo-temporal in front of the otic ganglion. Not only had this been clearly shown by dissection, but Schiff had succeeded in dividing the small petrosal nerve, and in arresting the reflex formation of saliva. As long as the seventh remained intact, and the glosso-pharyngeal as an afferent nerve, he did not see how the formation of saliva could be interfered with. Moreover, he heard of the copious flow of fluid from the mouth, and he had heard no evidence that this fluid was not saliva, doubtless mixed with altered mucus. Next, he objected to the suggestion that a copious flow of alkaline fluid could be a substitute for saliva as an aid to digestion. Saliva was slightly acid, and if it were alkaline its power to convert starch into sugar would be interfered with. With regard to the sense of taste, he thought it was well established that this sense was due to the fifth in the anterior third of the tongue, and to the glosso-pharyngeal in the posterior two-thirds. The glosso-pharyngeal was especially sensitive to salt, sweet, and bitter flavors; the fifth to acids. It was unfortunate that acids had not been tried. The interval of six or seven seconds that elapsed before sapid matters placed on the tip of the tongue were tasted was doubtless due to the time they required to creep over the surface into the district of the glosso-pharyngeal.

Mr. Charles Moore referred to cases in which he had divided the gustatory nerve to relieve the pain and distress caused by cancer of the tongue. In all of them the previously existing profuse salivation was immediately stopped. In all, common sensation and the sense of taste were alike absolutely destroyed. The patients were unconscious of the tongue being pinched or scratched, or of the contact of salt, sugar, aloes, Cayenne pepper, or citric acid.

Mr. Savory asked Dr Ogle what was the channel of reflex action when Cayenne pepper was put into the mouth.

Dr. Ogle replied the glosso-pharyngeal as the afferent, the small petrosal as the efferent, nerve.

Dr. Althaus thanked the President and Fellows for their reception of his paper. The case recorded by Duchenne was one of partial paralysis, and only affected one side. He agreed with Dr. Anstie with regard to the parallel consequences of hyperæsthesia and anæsthesia; and also in thinking that neurosis of the fifth pair often affected the nutrition of the hair, although not in this case. Dr. Broadbent's observation had, he thought, been met by Dr. Anstie; and the objections of Dr. Ogle by Mr. Savory.

OBSTETRICAL SOCIETY OF LONDON.

Dr. Hall Davis, President, in the Chair.

The discussion on the papers of Dr. Tilt and Dr. Meadows, on "Irritable Uterus" and "Flexions of the Uterus," adjourned from a previous meeting, was resumed by

Dr. Routh, who said that if he understood Dr. Tilt's paper accurately, it went to prove that the disease called irritable uterus by Gooch was very infrequent nowadays. Experience proved that abnormal complications existed in many of these cases; but while admitting this, it could not be doubted that the amount of complication often bore no relation to the amount of pain endured. And just as in an ordinary attack of tic-douloureux of the eye there was copious flow of tears and redness of the conjunctiva, not unlike inflammation, so it was possible that the uterus might be red and apparently inflamed, and yet this after all be only a simple tic of that organ. Such cases might still be cited as instances of irritable uterus. As bearing on the etiology of displacement, he would say that there were three varieties:—1. Those produced by inflammatory or other complications of surrounding parts—i. e., those retained by adhesions; these formed about 2 per cent. 2 The congenital, the percentage of which could not yet be determined. 3. The acquired, which might be met with either in an active state, with inflammatory or congestive symptoms, or in a quiescent state after all these had subsided. As regards anteversion, he believed it to be a more common affection than generally supposed, but fortunately, often quiescent. It should be remembered that the normal position of a child's uterus, and also in early puberty, was one of anteversion; and in later life a fat omentum, heavy and loaded intestines, &c., might induce this flexion quite apart from any inflammatory disorder of the uterus itself. With respect to retroflexion, he would say that, given a healthy pelvis and healthy ligaments, retroflexion was impossible; but what did occur was this—the round ligaments and the ligaments of Douglas were both especially relaxed; the lateral less so. The points of support superiorly being thus removed, the organ was disposed to fall on one side or the other, and when top-heavy through inflammation or congestion of the fundus, this tendency was increased, and with this predisposition, a sudden accident, a jump or a fall, often proved an efficient exciting cause of retroflexion. If he was right in these views, it followed clearly that until the congestion or inflammation was at least partially subdued by treatment no permanent good could result from the use of instruments. Now, he had seen several cases of women who had been treated by Hodge's pessaries, and Dr. Hewitt's modifications of them, and were still uncured, and suffering intense pain from them, and who only got well when the complications had been overcome. And in these cases, where retroversion was accompanied with pain, inflammation, or congestion of the organ, nothing but depletion combined with absorptive remedies did good, especially the former; and whether accomplished by leeches, scarifications, or the hysterotome, it was a necessary preliminary measure to the use of instruments. There was one variety of retroversion in which the pain in the fundus was most acute, but with little or no actual congestion or inflammation of the organ, the pain in this case being reflected from the ovary, which on examination would be found tender and inflamed. To treat this was to cure the disease, and reduce the case to one of simple retroflexion.

Dr. Savage said that this antagonism between practitioners so eminent as Dr. Hewitt and Dr. Meadows plainly showed that all opinion about uterine displacements was lamentably unsettled. He thought, therefore, that a reconsideration of the normal relations of the female pelvic organs with the pelvis might do something towards a more creditable uniformity of opinion. Dr. Routh had alluded to three ligaments of the uterus, but there were others, and those more essential, or what would become of Dr. Hewitt's vaginal base of support for his pessaries? The utero-pelvic cellular tissue, which enclosed the pelvic organs, had properties eminently fibro-elastic (muscular also in many parts of it), and was an integral part of the pelvic uterine system. The function of this tissue could be inferred from the following experiments on the dead body. Draw forcibly on the cervix with a vulsellum. The strain will be seen to begin with the utero-sacral portion where it divides to give passage to the rectum: thence it passes on to the broad ligaments: cut through these and the uterus comes down about an inch. In short, it is necessary to divide the pelvic cellular tissue before a notable displacement can be effected. Or to the vulsellum attach a weight, with the body in the sitting position. The weight must be heavy and the time long before the uterus appears at the vulva. Remove the weight, and the elastic property of the tissue, even in the dead body, causes the organ to retire. Cut through the broad ligaments close to the womb and the organ falls helplessly in all directions. If backwards, fix the neck, and there will be retroflexion (supposing the neck to be weak enough to bend); release the neck, and the back deviation is retroversion. He believed that there was always some prolapsus with retroversion. Owing to the presence of the rectum and bladder the cellular attachments of the vagina are limited to its sides, and this is why the vagina contracts not as a cylinder, but as a flat tube; the upper half being fixed, dilatation and contraction for the most part affect the lower half only, which must fall or rise in this to-and-fro relation with the former. No pessary, one excepted, can do much more than keep the womb out of the vagina. Then how account for the comfort attending their use? They ease the strain on the cellular tissue, which begins forthwith to regain its healthy tone. Aggravated cases of prolapsus of long standing are again and again held up, permanently reduced after the perineal operation; but should this tissue have lost its elasticity the best artificial perineum would be sure to give way. Hodge's was the best pessary, because in shape it corresponded with that of the contracted vagina, and with it the lateral vaginal action was unhindered, and the series of curative processes referred to permitted. It was a marital consideration which led to Hodge's curious modifications of the pudendal end of his instrument, and another authority still more considerate had cut off this end, and substituted india-rubber. It was regrettable to hear proclaimed far and wide pretensions to originality for what were in reality very unessential modifications. Of internal uterine pessaries, the record as a rule had been one of disaster. But, at the same time, he wished to be understood that, in condemning intra-uterine pessaries, he did not include that of Dr. Hewitt, because he had had no experience in its use.

Dr. Braxton Hicks suggested that in this case, as in many others, between the two extreme views propounded, a large amount of intermediate truth existed, which was quite overlooked. He considered that for practical purposes cases of retroflexion were to be divided into four classes, which however ran into each other at every degree. In the first class he would place cases of congenital retroflexion, where no pain had existed previously, and those in which, the flexion having occurred a long time before, all pain had completely gone off, every resisting part having accommodated itself to the change. It was impossible to say how many cases existed of this class, because, as they suffered nothing, they did not apply for advice, but the state was observed in looking for other troubles. In the second class, the retroflexion was *in transitu*; the supporting tissues were not yet fully stretched, so that when any straining or quick action of the body ensued, the parts were put on the stretch, and pain was produced. To this class the largest amount of relief is given by mechanical support. In the third class he would place those cases where to the retroflexion a state of congestion, hypertrophy, and tenderness, more or less severe, was added. If these cases were handled roughly per vaginam, or with the sound, no doubt much mischief might ensue; but if the uterus could be replaced by the postural mode, or even by the sound gently used, then, the uterus being free from concussion against the sacrum, and the tension being taken off the ligaments, great relief would be obtained. The organ could be kept in position by Hodge's pessary, the action of which was not so much to push the fundus up, as to keep the os uteri so far backwards that the retroflexion could not recur. In the fourth class he would include all those cases where the uterus was reflected, and either tied down by adhesions, weighed or pushed down by heavy tumours, or with a very tender ovary, &c., where the use of mechanical support would be generally more distressing than a means of relief.

Dr. Barnes believed that simple retroflexion was a cause of real and serious distress in many cases. He found that congenital retroflexion was more frequent than it was supposed to be by Drs. Routh and Hicks. Cases of severe suffering in single women due to it had come under his care. A year ago he was asked to see a young lady who had long been suffering from obstinate constipation; there being pelvic distress, he was requested to examine. There was decided retroflexion. The body of the uterus, turned back in the hollow of the sacrum, pressed like a ball-valve upon the rectum, impeding defecation; and after a time the intestines, from being constantly distended, had become paralysed. A Hodge's pessary gave quick relief, and gradually the uterus rising into its place, the intestines regained power. It was therefore certain that inflammation or other disease of the uterus was not necessary to the production of retroflexion. A most common cause was childbirth or abortion. In many cases where he had been called in to treat secondary puerperal hæmorrhage, he found retroflexion, and when the retroflexion was relieved, the hæmorrhage commonly stopped. After labour, if involution were retarded, and the patient got up too soon, the uterus was apt to roll backwards, and if not rectified at the time the retroflexion became chronic, and various disorders ensued. To restore the body of the uterus to its place Hodge's pessaries answered admirably. He concurred in what Dr. Savage had said about bringing out modifications of Hodge's pessary under new names. Hodge himself had made various forms. The one thing to remember was the principle. It was a lever, and must be made to float with the vagina. It should not be fixed.. A common fault in the pessaries was that they were made too large, so as to stretch the vagina, which was destructive of the principle of the pessary. He thought that Hodge's pessary could often be used advantageously whilst there was inflammatory complication. By supporting the uterus in its due relations, the hyperæmic condition of the body was relieved by the freedom afforded for the return of the blood from the engorged vessels. It was by no means illogical to treat the epiphenomena, the consequences of the disease, first. It was a fallacy to disregard these, and to limit our attention to the presumed cause. In most conjunctures in medicine we were compelled to treat the secondary complications. Indeed, it was only by observing and removing them that in many cases we were enabled to trace back and discover the primary disorder.

Dr. Squire wished to protest against the use of the hysterotome as a means of depletion in these cases; injurious and dangerous results he had known to follow its adoption. Ovarian irritation also would subside under other remedies than leeching and blistering, if the use of alcohol were prohibited. Involution of the uterus was greatly aided by lactation, and retarded by alcohol, the use of which ought to be limited where lactation is not carried on. He could not consider the puerperal state as a disease of more than a week's duration, though careful management was necessary for at least a month longer.

Dr. Priestley said that he recolleced the time when uterine flexions were denied a place in uterine pathology by some authorities, and even now eminent practitioners were not in accord as to their frequency and importance; indeed he was informed by Dr. Greenhalgh that so eminent a teacher as Dr. Churchill, of Dublin, had never as yet met with anteflexion in the unimpregnated uterus. He quite coincided with Dr. Barnes in reference to the frequency and severity of the local symptoms sometimes associated with retroflexion as their direct cause. He could indeed testify that within his experience retroflexion of the unimpregnated uterus had been productive of very grave symptoms. Uncontrollable chronic vomiting had in some cases been a prominent feature. In another case, in which he had ascertained by examination that there was acute retroflexion of the uterus, the patient had for some years been suffering from what appeared to be progressive paraplegia, until she lost almost entirely the power of walking. The use of a Hodge's pessary gave great relief; the patient began soon to walk little by little, and was now gradually regaining the use of her limbs. In this case there were no symptoms distinctly pointing to uterine derangement, and the womb was not in the least degree morbidly sensitive to touch. When patients experienced pain in the pelvis in connexion with uterine flexions he felt confident that it was not always due to some superadded congestion or inflammation of the uterus—that it did not, indeed, always proceed directly from the uterus itself. In a lecture published some years ago he had pointed out that the cause of the attendant suffering was often to be found in the condition of the ovaries. In the cases where the results were felt in distant organs, pressure caused by the displacement could not account for the symptoms, but they were probably due to reflex effects upon the nervous system. He had no hesitation in recognising the classification suggested by Dr. Hicks. In treatment he pursued an eclectic course, dealing with each case in accordance with its own peculiar features. With respect to depletion as an occasional treatment, he preferred that moderate amount which would be just sufficient to relieve the congestion present rather than the frequently repeated and larger bleedings alluded to in the discussion, and he could not regard depletion alone as a remedy for the displacement. In conclusion, he could bear willing testimony to the value of Hodge's pessaries in suitable cases.

Mr. Heckford exhibited the Generative Organs of a child aged ten months, in which the vagina was enormously dilated, and occupied by villous growths of a medullary character. The rectum, bladder, and urethra were normal. The os uteri opened into the upper wall of the vaginal sac. The disease had lasted for about four months, and the child died shortly after its admission into the East London Children's Hospital.

Dr. Meadows exhibited some Medicated Pessaries, which he believed to be more efficacious than those made with the cocoa butter. These new forms were more cleanly and more certain. The uncertainty in the action of the pessaries in ordinary use he believed to depend mainly on the fact that it was no part of the function of the vagina to absorb fat, and that the medicinal ingredients in the pessaries, being coated over, as it were, with a protective shield of the butter, passed away from the vagina without being absorbed. At his suggestion Messrs. Bell and Co. had now made some pessaries in which the basis was soft soap made into a mass, either with powdered althæa, or with starch, or with beeswax. In either of these forms the pessary would readily melt, and the ingredients were easily absorbed by the vagina. From the absence of any protecting fat, the strength of the pessary could be much diminished.

The President exhibited an Intra-uterine Fibroid Tumour which he had recently removed from a maiden lady, aged fifty. Symptoms of uterine disorder had existed for upwards of seven years. The abdominal tumour reached nearly to the naval, was uniform and symmetrical. Internally it was adherent to the uterus anteriorly and laterally, free posteriorly up to the fundus, where it was strongly and widely attached. After due preliminary measures, the lower third of the growth was amputated by the single-wire écraseur. The remainder was then cut into in various directions, and portions excised with curved scissors. On the fourth day the devitalised remnant was thrown off entirely, leaving the uterus quite empty. The entire tumour weighed eighteen ounces. The patient had done well.

Dr. Graily Hewitt exhibited a series of Pessaries, which he had for some time employed in the treatment of uterine displacements and flexion. First, a series of oval rings, a modification of Hodge's pessary, of various sizes, for the treatment of retroflexion and prolapsus. Secondly, a series of pessaries of various sizes, and of novel construction, for the treatment of anteversion and flexion. These are made from a ring, bent into a peculiar form, and termed by the inventor "cradle" pessaries. For two years he had made use of these with very satisfactory results. Thirdly, a series of stem pessaries, also of novel construction: the stem of ebonite, half an inch long, supported in its place by an oval-shaped basis of gutta percha—of various sizes, according to the size of the vagina. These he had used in the more obstinate cases of anteflexion, and for dysmenorrhœa, or sterility therewith associated, and also in certain cases of retroflexion. The various instruments exhibited were constructed on the principle of using the vagina as the basis of support, or *point d'appui*, from which to act on the uterus, and the author had found them most efficacious in dealing with various obstinate mechanical derangements of the uterus.

PATHOLOGICAL SOCIETY OF LONDON.

SIR HENRY THOMPSON, in the Chair.

A REPORT was read on Mr. Birkett's Tumour of the Leg exhibited at the last meeting, in which it was stated that it was of a fibro-plastic character, and free from all conditions of an encephaloid nature. The report on Mr. Hick's case of Sero-cystic Tumour of the Breast was deferred.

Mr. Christopher Heath exhibited the first specimen, taken from a man aged sixty, affected with Cancer of the Tongue. The anterior half of the tongue was diseased, and the growth had encroached upon the mouth, especially its floor; and, in order to get at and remove it the more readily, Mr. Heath divided the jaw. The écraseur was then used. There was some smart secondary hæmorrhage. The growth was found after removal to be seated in the middle of the tongue. It was not epithelial, but probably medullary, being made up of fibres enclosing largish cells of peculiar character. The patient had progressed favorably.

Mr. Heath also showed a large tumour attacking the upper part of the face and involving the cranium, of a young woman aged twenty-four. The case was remarkable in many ways. Eleven years since a small growth made its appearance at the inner corner of the right orbit; when it had reached the size of an almond it was removed by Sir William Fergusson. The young woman remained well for several years, when the disease returned, and reached the size of a lemon. It was again excised by Sir William Fergusson, who believed it to be a fibroid growth. Within a few months it once more developed, and in a year and a half attained large dimensions. When Mr. Heath saw the case it was clearly evident that no operative procedure was admissible. The patient had a violent fit on September 15th, just after admission to hospital, and in a very few days hæmorrhage from the ulcerated surface took place. There was no recurrence of the fit before death. The eyes were thrust out on either side: though the left was turned aside, the sight continued perfect till death; that of the right eye, much displaced, was lost last December. At the post-mortem, on removing the skull, the convolutions were flattened by a growth beneath the anterior lobes, and to which the olfactory bulbs were adherent. The optic nerves were not involved. The growth began in the right nostril; it pushed aside the septum, invaded the frontal sinuses and the right orbit, and a second growth travelled backwards through the sphenoidal fissure. The growth was somewhat between a fibroid and a lymphoma.

Mr. T. Holmes referred to a similar case observed in St. George's Hospital, in which there was an absence of brain symptoms.

Mr. Hulke likewise referred to the same point, and bore testimony to the fact of the absence of brain symptoms in some cases in which tumours in their growth advanced into the skull. He, moreover, emphasised the importance of using caustics freely in connexion with the knife in the attempt to extirpate such tumours at an early date.

The specimen was referred to the Committee on Morbid Growths.

Dr. Church exhibited a Stomach presenting a peculiar mammillated appearance, taken from the body of a woman admitted into St. Bartholomew's with symptoms of anæmia and vomiting. At the post-mortem purpuric spots were noticed on the body, which was extremely pallid. On cutting across the veins of the neck gas escaped from the cut ends. The body was still warm, though it was thirteen hours after death when the examination was made. There was a bubble of gas also in the centre of a clot in the heart, and in, more or less indeed, the blood all over the body. The interior of the stomach presented an appearance like skin affected with small-pox. The elevations were glandular, being distinctly lobulated, with a central aperture. There were a few similar spots in the duodenum. On microscopic examination, next day, of the blood, tongue, and stomach, an immense quantity of bacteria were seen.

Dr. Church also exhibited an Aneurism of the Pulmonary Artery.

Mr. T. Holmes brought before the notice of the Society a Fibrous Tumour from the Scrotum, removed from a man aged fifty-one, who had suffered for thirty-three years from the growth of a lump which he said had slowly come over the right testicle. As there was a sudden increase in its size, the patient wished it to be removed, and it was found necessary to take away the testicle in the operation. The man did well. The tumour was of a fibrous nature, with softening in the centre.

Mr. Heath called to the memory of the Society a Tumour which he had exhibited, and in the centre of which a cavity existed. He imagined the central softening in Mr. Holmes's case was preparatory to the formation of a cavity.

Dr. Bastian showed two Aneurisms, one in the cerebral artery of either side. The interest in the case consisted in the symmetrical character of the lesions. The aneurismal dilatation were about the size of a large pea; one was pervious, in the other the channel was obliterated. The symptoms in February last were sudden paralysis of the left arm and the face, confusion of mind, forgetfulness of words, and difficulty of articulation. An improvement in these conditions took place, save in regard to the paralysis of the arm. Some months afterwards a second attack of similar character occurred, and the leg was paralysed. The patient died comatose in August. At the post-mortem examination, besides the aneurisms, there were other serious lesions; the oldest was in the third frontal convolution of the right side. A clot of coagulated blood existed in the upper part of the middle lobe; there was also found, on the left side especially, softening of the corpus striatum and adjoining white matter.

Dr. Bastian called attention to the want of symmetry in the two posterior lobes of the cerebral hemispheres as illustrated by the brain of a lunatic and those of two healthy subjects. In these cases there was a tendency to the formation of a distinct notch on the tip of the posterior lobe. He thought it worthy the attention of observers to note how far this was constant.

Dr. Murchison detailed the post-mortem appearances seen in the body of a man aged twenty-four, who died on the third day after admission to the Middlesex Hospital, with symptoms simulating tubercular peritonitis, in connexion with acute tuberculosis. At the post-mortem the chief appearances consisted of enormous disease in the intestines, commencing at the pylorus, and extending along the duodenum and the jejunum for two or three feet, in the form of deposit two inches in thickness, in some parts involving the coats of the intestines, and on section giving exit here and there to a milky juice. The same kind of deposit existed in other parts of the abdominal cavity, especially in the glands, which were seriously affected. The kidneys were remarkably infiltrated by the deposit, in the form of little masses the size of a small bean. In the liver the same kind of foreign substance was freely distributed in the portal canals, and surrounded the bile-ducts and the portal veins. Similar deposits were seen in the heart, the parietes of the abdomen, and the diaphragm. Under the microscope, no cancer cells were to be detected; the foreign material seemed to be of nuclear character. The interest of the case consisted in the wide-spread character of the disease. It might be regarded as syphilitic, but Dr. Murchison scarcely inclined to this view.

Dr. Moxon said against the probability of its being syphilitic was the fact that the tumours were vascular and raised. In the cases of syphiloma of the kidney hitherto recorded there existed cheesy, non-vascular matter in the fibrous cyst. The distribution of the morbid material pointed to carcinoma; it might be malignant fibroid of general distribution.

Mr. Hulke differed from Dr. Moxon in regard to the non-vascularity of syphiloma; he had seen it very vascular.

Dr. Murchison did not declare the disease to be syphiloma. He scarcely agreed with Dr. Moxon that the tumours in his case were very vascular. At the post-mortem examination every one present at first thought the disease to be cancerous till examined minutely.

Sir H. Thompson remarked that he should have imagined form the mark in the groin that the disease was not syphilitic.

The specimen was referred to Dr. Sanderson, Dr. Cayley, and Dr. Moxon for examination.

Mr. Fairlie Clarke exhibited a Pendulous Tumour of the Prepuce, of sebaceous origin.

Mr. Spencer Watson brought forward a living specimen to show the sequel of operative interference in the case of a blood cyst of the thyroid.

Mr. Maunder and Mr. Heath referred to a case in which the similarity between such cases and aneurism was decided in consequence of transmitted pulsation from the artery beneath.

Mr. Spencer Watson showed a second specimen, one of Sarcoma of the Testicle, resulting from a blow.

Dr. Green exhibited a specimen of Varicose Veins of the Small Intestine.

Dr. Ballard handed round the room a piece of bone which had been removed by a surgeon from the leg of a young woman, and which he thought was the head of the fibula.

Mr. C. Heath said unquestionably it was not the head of the fibula; it had no articulating facets, and no epiphysis. Besides the effect of the removal of the head of the fibula would at once be apparent in the mobility of the shaft. It was a *bonâ fide* exostosis.

Several reports by the Committee on Morbid Growths were read. The first, on Mr. Carr Jackson's secondary tumour of the lung, following a similar morbid growth of the periosteum of the humerus. Secondly, on Mr. Pick's case of sero-cystic tumour of the breast, which turned out to be an adenoid growth, complicated by a cystic formation, from the interior of which projected polypoid growths. Thirdly, on Mr. Heath's case of tumour, which was a sarcoma originating in the periosteum.

Mr. Bruce then exhibited various Patellæ, the cartilaginous surfaces of which were opaque, or more or less roughened, and as it were eroded. These changes had been observed in patients who died of pyæmia, and had been ascribed by Professor Redfern to inflammatory action; but Mr. Bruce believed that they were the consequence of a true degeneration. They were seen with increasing frequency in persons as they advanced beyond mid-life. The first change visible to the naked eye was the production of a yellowish opaque patch, especially on the parts exposed to friction. Then the cartilage becomes split up roughly into fibres, so as to present a shaggy appearance, which can be floated out in water; this fibrillation being most marked in the lower layers. The final result was a form of erosion. These changes were not accompanied by any symptoms by which their occurrence can be recognised during life save a grating sensation. Mr. Bruce had seen the condition described in most cases in the dissecting-room. Other bones were affected besides the patella, but the latter was the selective seat of the changes, probably on account of its comparatively low vitality.

Mr. T. Smith referred to Professor Redfern's researches, and asked for information as to the exact differences between that gentleman's observations and those of Mr. Bruce; and the latter explained that he did not agree with Dr. Redfern that the changes were inflammatory.

Mr. Adams thought surgeons were aware of the changes, and that they were often associated with chronic rheumatic arthritis. He did not agree with Mr. Bruce as to the comparatively lower vitality of the patella because it partook of the characters of a sesamoid bone. When the patella was fractured, if the fractured ends were apposed, union took place readily, showing that the vitality of the bone was considerable.

Dr. Green wished to know, if any special part of the cartilage were affected, whether it was that exposed to friction (to this Mr. Bruce assented), because the changes resembled chronic inflammatory changes, as seen in the "white patches" on the pericardium and elsewhere, rather than "degeneration."

Dr. Bristowe exhibited a diverticulum in the pericardium.

Dr. Church showed a specimen of Cancer of the Thyroid, involving the trachea and œsophagus; also a mediastinal tumour of large size.

Dr. Beigel related the symptoms of what appeared to be a case of Lepra Tuberculosa, and placed under the microscope specimens showing the general infiltration into the tissues of fibro-plastic material, forming nodules on the surface, and leading to thickening of the walls of the alveoli of the lungs and elsewhere. The specimen was referred to the Committee on Morbid Growths.

Mr. J. D. Hill exhibited the parts from three cases of Resection of the Knee-joint.

Dr. Payne presented a specimen of Ulceration of the Trachea and Bronchi, the glands and the upper part of the trachea being perfectly free from disease. The ulcer had perforated the mucous and sub-mucous coats, but the cartilages were uninjured. There was no apparent cause for the disease. The woman in whom it occurred died with symptoms of severe dyspnœa.

Mr. Wyatt exhibited the parts from a case of Carcinoma of the Pylorus, together with disease of the supra-renal capsules. He did not know—for he had not had time to examine the specimen—whether the changes in the capsules were cancerous. The specimen was referred to the Committee on Morbid Growths.

Mr. Weeden Cooke exhibited a tumour weighing 2¼ lb., which he had removed from the neck of a man who had suffered from the disease for twenty-seven years. The tumour was lobulated, fleshy-like above, colloid-like below. On microscopic examination, it was found to be composed of gland-like tissue above and colloid matter below. Mr. Cooke regarded it as an instance of an innocent tumour taking on a malignant character. The specimen was referred to the Committee on Morbid Growths.

The President here remarked that it would very much facilitate the labors of the Committee just named, and save them much trouble, if portions of specimens likely to be referred to them were placed when fresh in chromic acid solution.

Mr. Hulke exhibited some microscopic preparations illustrating the structural alterations which the optic nerves and retina undeigo in connexion with intracranial diseases, and disease of the kidney, with the object of directing the attention of the members of the Society to the frequency of these complications, in the hope that no opportunity would be lost of getting post-mortem examinations, and of extending our exact knowledge of these most interesting cases. The changes observed in the optic nerve in the first class of affections are—1, congestion and œdema, marked ophthalmoscopically by swelling of the papillæ and venous turgors, with but little opacity of the tissue; and, 2, congestion and œdema, with exudation and proliferation of the neuroglia. The relation between the morbid processes in the optic papillæ and those within the cranium was sometimes direct, as where a tumour of the basis cranii, or of the membranes clothing it, or one in the brain itself, projected into the middle fossa of the skull in such a way as mechanically to interfere with the cavernous sinus, and through this to hinder the efflux of blood from the ophthalmic vein; but in other cases the relation was less immediate and more obscure, as where a tumour in the lateral mass of the cerebellum is associated with neuritis optica. Mr. Hulke had found syphilitic gummata to be a frequent cause of neuritis, and he thought scrofulous basal meningitis another common cause. The anatomical alterations observed in the retina, associated with kidney disease, are the occurrence of large, fatty, granular corpuscles, principally in the inter-granule and in the outer granule layers; the presence of large structureless, colloid nodules in these layers; and the existence of nests of horny, translucent nodules in the spaces between the inner ends of the connective-tissue radial fibres, which were once thought to be sclerosed ganglion cells, but are now by many observers regarded as nodularly hypertrophied nerve-fibres.

Dr. Murchison showed a specimen of Cancerous Ulceration of the Stomach, the remarkable feature of the case being the occurrence during life of an inflammatory tumour at the epigastrium, which suppurated, and was followed by a fistula. At the post-mortem examination it was found that there was a fistulous opening between the stomach and the exterior of the abdomen.

Dr. Murchison's second specimen was one of Simple Ulcer of Duodenum, not remarkable anatomically, save in the presence in the floor of the ulcer of the openings of several large arteries. The lung was tubercular, but no sign of tubercle existed until three months before death, and Dr. Murchison thought it probable that the tubercle was induced by absorption of morbid products from the duodenal ulcer.

Dr. Moxon exhibited a specimen of Cancer of the Œsophagus, with secondary (epithelial) nodules in the substance of the lung. He thought the secondary disease might have arisen by the transportation by gravitation of epithelial cancer elements from the œsophagus into the bronchi.

The President and Mr. Campbell De Morgan both confirmed Dr. Moxon's statement as to the probability of the occurrence of secondary growths by general diffusion from an origiual centre, and pointed out that they had both adduced cases in point.

Dr. Moxon also showed the parts from a boy who had acute prostatitis and pyæmia, abscess being found in the kidneys, the wall of the heart, &c.

MEDICAL SOCIETY OF LONDON.

Dr. B. W. Richardson, F.R.S., President, in the Chair.

Mr. W. Adams described a New Mode of Treating the Deformities arising from Cicatrices of Burns, &c. It was an operation originally devised by Mr. Tamplin in the case of web-fingers. The great difficulty was to obviate, after any division of the web, cicatrisation and reunion at the cleft. This was overcome by inserting a steel instrument, provided with compressing plates, so as to cause a perforating slough, which being once fully established, prevented reunion at the spot at which, under other circumstances, it almost invariably occurred. After this was accomplished, the bands were divided by the knife. Mr. Adams related a case of extreme deformity of the left leg and foot, the result of a burn, which had been treated in this manner with perfect success.

Mr. H. Smith showed Portions of Bone removed during Primary Excision of the Elbow-joint. The violent injury to the structures which rendered an operation necessary had left the brachial vessels and the principal nerves unimpaired; therefore, Mr. Smith decided on primary excision, which he considered was novel in London hospital practice, instead of amputation.

Dr. Maudsley read a paper on Aphasia, which we published in the present number.

Dr. Sedgwick exhibited an Adaptation of the Mirror to the Uterine Speculum. Mr. Spencer Watson showed a case illustrating the Treatment of Wounds by the Antiseptic Method. The case was that of a boy who had a wounded knee-joint. Mr. Watson injected into the joint a lotion of carbolic acid, one drachm to a pint. The same gentleman also exhibited the comminuted bones and a bullet removed from a hand injured by a pistol-shot two years before. Mr. Cooper presented a case of Carcinoma, about ten by five inches, situated over the lower part of the sacrum. Mr. Henry Smith exhibited a case of Excision of Knee, operated upon eighteen months ago. There was bony anchylosis, a most useful limb, and the boy was in excellent health.

Mr. Hunt followed with a paper "On the Phases of Physic in the Nineteenth Century."

Mr. Francis Mason showed a child, aged five years, with Congenital Cleft Palate, on whom he had operated without chloroform. He had in this case first pared the edges of the cleft, and there was but little difficulty in finishing the operation. Three sutures were used, which were removed on the third day, the uvula being perfect.

Mr. Mason also showed a young woman, aged twenty-one, with Congenital Cleft of Soft and Hard Palate, upon whom he had four years ago performed an operation on the hard palate. He then separated the soft tissues from the hard palate in a direction from the alveolar border. This operation failed. In January last he used "Langenbeck's Raspatory," and separated the tissues in a direction towards the aperture. This was completely successful. By this proceeding a thicker and much more vascular flap can be obtained.

Mr. H. Smith considered the case to have established a point in practice—viz., that even in a young child chloroform can be dispensed with.

After some remarks by Mr. De Méric,

Mr. Weeden Cooke discussed the relative merits of closure by operation and closure by mechanical means.

Mr. Napier thought the time for remedying defects in the palate by mechanical means was only when surgery had failed. Much misconception existed concerning the supposed recent introduction of mechanical treatment. He himself had seen it adopted eighteen years ago.

Mr. Thomas Smith admired the results of Mr. Mason's cases; it is only in *acquired* cleft palate (as from lupus, &c.,) that the mechanical treatment applied by surgeon-dentists is valuable. In congenital cleft palate the operation is indicated, and for the easy and successful performance of this he recommended the use of a gag which he had devised for obtaining a complete and undisturbed view of the parts.

Dr. Sansom exhibited, for Mr. Ceely, of Aylesbury, an Apparatus for Diffusing Hot Air through the atmosphere of an apartment.

Dr. Kelburne King, of Hull, read a paper "On Carbolic Acid and the Antiseptic Treatment in Surgery." Modern science shows that suppuration is not a wearing process in cases of those wounds which do not heal by first intention; granulation can occur without suppuration. Access of air is the most common cause of suppuration, not on account of the air itself, but the germs which are contained in it. Carbolic acid diminishes or annihilates suppurative action. The author had employed in different cases dressings of (1) solution of carbolic acid; (2) carbolic oil, proportion one to four; (3) carbolic putty—i. e., whiting added to carbolic oil to a desired consistence. The author claimed for the treatment—1. That decomposition of discharges is prevented. 2. That it enables those parts injured beyond redemption to slough away without becoming foci for the reformation of pus. 3. That it exercises a control over the formation of pus in the centre of wounds. 4. That it diminishes the chances of blood-poisoning. 5. That it is of signal service to the patient himself and to those surrounding him, as all fetor is absolutely prevented.

Mr. De Méric objected that the so-called principles of Lister's were unwarrantable. Admitting that excellent results had been obtained, the cases might have done as well had no such treatment been adopted.

Mr. Hancock believed the treatment to be most valuable. He adduced some very successful examples occurring in his own practice. He preferred all the other applications of carbolic acid to the "putty." He demurred, however, to the practice of amputation through the unsound structures.

Mr. Adams agreed with Mr. Hancock, but found some instances in which carbolic acid, *per se*, was too great an irritant. He found the treatment could not prevent all suppuration. Exclusion of air was a most important concurrent means.

Dr. Sansom thought credit was justly due to M. Lemaire, who propounded the treatment in 1859. Competent observers have decidedly shown that the treatment is successful, and that it diminishes suppuration. It is proved not to act by chemical means, but there is great evidence to show that it destroys germs. Failures may be partly due to neutralisation of the effects of the acid by fatty matters (as advanced by Lemaire), or to the influence of gaseous compounds of decomposition, against which it cannot contend.

Mr. C. J. Fox introduced the subject of the action of nitrous-oxide gas in dentistry, but the discussion was adjourned.

The paper of the evening was that by Mr. Haviland, on the Geographical Distribution of Cancer.

CLINICAL SOCIETY OF LONDON.

Sir. Thomas Watson, President, in the Chair.

ASCITES.

Dr. Bristowe communicated nine cases of ascites in male patients, not complicated with disease of the kidneys, heart, or lungs, in all of which the ascites either underwent marked diminution or entirely disappeared during the period of treatment. One of the cases presented the characters of tubercular peritonitis, but the others appeared to be dependent on disease of the liver or of its capsule. In six cases paracentesis had been previously performed once or twice; in all diaphoretics, purgatives, or mercurials, had been given with more or less unsatisfactory results. In each patient the diminution of the ascites had occurred during the employment of a tonic plan of treatment, consisting in rest, careful attention to diet and to regimen, combined with the con tinuous administration of chalybeates, alone or in combination with quinine. Throughout, the amendment of the constitutional state was as remarkable as the disappearance of the peritoneal effusion.

A short discussion followed the reading of the paper, in which the President, Dr. Pollock, and Dr. Davies took part.

SUBCLAVIAN ANEURISM.

Mr. C. Heath brought before the Society a case of subclavian aneurism. The patient had suffered from an aneurism of the opposite side, which had undergone spontaneous cure. He considered the case unfit for operative interference. Were the patient in better health, the distal ligature offered the best hope for success. After referring to various remedies which might be suggested, Mr. Heath said he had brought the case forward for examination, and to elicit an expression of opinion with reference to treatment.

Dr. Davies referred to the good results which he had known to follow the local application of ice in similar cases. He thought it would be justifiable to attempt some operation which would be most advantageously practised with the help of antiseptics.

Dr. Sanderson stated that he found on examination that in the right radial pulse arterial pressure was diminished, and the artery filled very slowly, results due to feeble heart action, and want of elasticity in the artery. He considered the patient's prospects most unfavorable, the more so as a systolic bruit and intermittent pulse indicated serious heart disease.

Dr. Baumler remarked upon the condition of the pupils as connected with the communicating fibres of the sympathetic.

Mr. Bruce drew attention to the question of amputation at the shoulder in cases of subclavian aneurism.

Mr. Moore would leave the patient to the chance of a spontaneous cure; and, in reply to a question from Mr. Willett, stated that he thought the principle of introducing a foreign body, such as needles passed through the aneurism, a good one.

Mr. C. Heath, in reply, observed that he had never seen any good results from the use of ice in such cases as these.

Mr. Maunder read for Mr. Little a report of the case referred to at the last meeting, in which the femoral artery was tied for traumatic inflammation of the knee-joint. He referred to the safety with which the femoral artery might be ligatured when not previously diseased; and to the good results which followed the operation in the present instance.

Mr. Bryant considered the operation worthy of attention, but he thought that it would be most serviceable in the treatment of large diseases which could not be removed, such as cancers, especially bleeding ones.

Mr. Moore approved of the treatment in this case, and referred in illustration to a case in which good results followed acupressure of the brachial for the cure of acute suppuration deeply seated about the hand.

Mr. Hill mentioned several cases in which good results had followed treatment allied to that described by Mr. Maunder.

Mr. Willett referred to a case showing the marked effect upon inflammation of ligature of the ulnar and radial arteries. At the same time he had seen cases like the one under Mr. Little's care, in which the patients had recovered rapidly, after letting out pus from the knee-joint, under ordinary treatment.

Mr. Maunder observed that he wished it to be understood that he advised the operation only in very exceptional cases.

The President announced that the Committee on Acupressure and Torsion would be much obliged for any facts or observations which the members of the Society might be good enough to supply them with.

[In the report of Dr. Andrew Clark's remarks at the last meeting, for "limitarians" read "unitarians."]

Editorial.

THE PROPOSED REVIVAL OF BLEEDING.

The able address of Dr. Richardson on Blood-letting, to which we have already referred, is now printed at length in the current number of our contemporary, the *Practitioner*; and as it has by this time probably been read by many who did not hear it delivered, we may with propriety criticise this essay; indeed we could not justifiably allow it to pass without something like a detailed examination. Dr. Richardson is a representative man, and his words will carry so much weight in many quarters that it is a positive duty to submit them to a searching revision, considering the immense importance of the subject with which they deal. Let us hasten to acknowledge, at the outset, the literary ability and the conscientious spirit of inquiry which distinguish Dr. Richardson's paper; they are unquestionable, and the reader who most disagrees with the arguments will none the less enjoy a pleasing mental exercise. So much acknowledged, we must proceed to the more ungracious task of skeptical criticism, using those terms in their philosophic sense.

And be it remarked, in the first place, that the historical theory of the recent decline and fall of bloodletting which Dr. Richardson propounds is one that appears to us neither sufficient nor in the main correct. The revolt against bloodletting he rightly describes as but one instance, though the most important, of the necessary discredit which fell upon the ancient dogmas of medicine when anatomy, chemistry, and physiology began for the first time to assume the character of exact sciences. But we think he is wrong when he speaks of these dogmas as being mainly "empirical"—i. e., the authoritative utterance of celebrated men, who said: "We know from our experience that such-and-such prescriptions cure such-and-such diseases." It is true that a great deal of this kind of empirical dogma did come to a sudden and disastrous downfall in the agitation which succeeded the new birth of morbid anatomy and of physiological chemistry; but this downfall corresponded rather to the accidents than to the essence of the change that took place in the spirit of the age. What seems to us to mark far more distinctively the character of that profound alteration in the spirit of modern medicine which began to work with John Hunter, and first assumed a definite form, perhaps, in consequence of the labors of Laennec in morbid anatomy, is the abandonment of the *à priori* method of argument, and the general acknowledgment that the inductive method (imperfectly understood though it was) is the only truly scientific and the only fruitful process in medical inquiry. We cannot allow that this is a mere point of antiquarian interest, a mere phase in the history of dead and gone medical ages; on the contrary, we maintain that if the present generation is again to take up the discussion upon bleeding, and again to weigh the justice of the arguments adduced by the older writers in favor of the practice, it behoves us especially to beware of the leaven of the metaphysicians which so abundantly leavened the ancient pleas for this and every other "heroic" mode of treatment. That this warning is by no means unnecessary is certain, for Dr. Richardson has himself fallen into the error in question in a very conspicuous and important instance; and as it is quite impossible in the limits of one leading article to discuss all the ten propositions which Dr. Richardson so ingeniously maintains, we shall limit ourselves on the present occasion to an examination of his argument in favor of bloodletting as a means of arresting acute inflammatory action.

Dr. Richardson remarks that the ancients discovered that bloodletting reduced over-action, and that grand symptom of over-action, accumulation of animal heat; and he declares that they had a strong case for this theory, for "we know that to remove blood is to reduce the animal heat, as we know that to take out the burning fuel from the furnace is to reduce the motion." Never was there a more astonishing assumption. There is not one recorded case with which we are acquainted which supports the statement; for the older physicians, who used to bleed, never measured the interior temperature of the body with the thermometer, but merely guessed at its level from the feeling conveyed to the hand placed on the superficial parts—a process which is entirely deceptive; nor does Dr. Richardson adduce one iota of thermometric proof. But who does not know that a patient may feel chilly and depressed, and yet have an abnormally high temperature of mouth, rectum, and axilla? As for the simile derived from the fuel of the furnace, it is the very pattern of a false analogy. Grant for a moment that in inflammation the blood is the fuel—a mere hypothesis,—how does that make it certain that the abstraction of a certain amount will lower the bodily heat, or will reduce the "over-action" of which Dr. Richardson asserts that the accumulation of animal heat is a "grand symptom?" When we take out red-hot coal from a perfectly ignited furnace, we undoubtedly reduce the power that generates motion; but when we remove twenty ounces of blood, at a temperature of 100° Fahr., from the venous system, we are *not* taking away a definite quantity of the only material that keep up the heat-making process. No one who has studied Lister's researches on the early stages of inflammation can fail to see the strongest reason to believe that the inflamed tissues themselves are largely concerned in the heat-making processes, and that they will continue to supply an influence which can keep up the temperature of the blood quite independently of the abstraction or non-abstraction of what may amount to one thirtieth of the circulating fluid.

Nor is this the most formidable of the theoretic objections that can be urged to Dr. Richardson's view. For while all analogy and all existing knowledge point to the belief that tissues in the process of *destruction* will continuously give out heat; so, on the other hand, we can scarcely doubt that the building up of newly organised tissue is a process which necessarily tends to the reduction of temperature. But this building up of perfect, or nearly perfect tissue, is one of the objects to be striven for, in the management, for instance, of a pneumonia. Dr. Richardson proposes to take away the potential material of well-formed tissue; which really is equivalent to checking the formative, and speeding the degenerative, process. So that the very treatment which on speculative grounds he justifies, turns out, when we push our speculations further, to be the ideal of an inappropriate, instead of the pattern of an appropriate, remedy!

But, in fact, we object, at present, to arguments based on the probabilities of the case. It is Dr. Richardson's duty, before he gives the weight of his authority to the statement that in early inflammation bleeding reduces both "temperature" and "action," to prove this proposition by a rigorous and extended thermometric inquiry. There are many suggestions in his paper which we believe to be of real value, and to these we shall return in a future article; but upon the question above discussed it is most important that no time should be lost in pointing out the very serious faults of argument into which we think Dr. Richardson has been betrayed.

ON THE ORIGIN AND PROGRESS OF EPIDEMICS.

In a recent number of *La France Médicale* a paper appears by M. Poznanski under the heading of Dynamical Pathology, in which he endeavors to furnish a rational explanation of some of the principal facts exhibited in the origin and spread of miasmata. He notices that epidemics of various kinds are, as a general rule, preceded by floods, followed by intense heat. As the waters drain off extensive decomposition takes place in the organic matter, the particles of which are carried up with the watery vapor which arises from the warm and moist soil. The air thus charged with organic matter constitutes a miasm, and according to its temperature will be the rapidity of its ascent: if its heat be great, it will rise nearly perpendicularly; if moderate, more slowly. In the former case the quickness of its rise will lead to an equally rapid fall of temperature, and as a consequence the aqueous vapor with which it is charged will fall as rain; in the latter case the condensation of the watery vapor will be less obvious and more partial. From the moment, however, that the aqueous particles are precipitated, the air charged with miasma, no longer rendered specifically lighter by their support, has a tendency to fall, and as the difference between the air containing and that destitute of watery vapor is not very great, its descent will not be vertical, but will pursue a curve, or more or less diagonal direction, and this curve will be longer or shorter according to the difference of temperature. If the primary heat be intense the ascent of the miasmatic air will be rapid, its cooling sudden, the condensation of aqueous vapor more complete, and the fall of the miasm more vertical, so that it may affect the tract of country to which it owes its origin. If, on the contrary, the primary temperature be moderate, the ascent takes place more slowly, the aqueous condensation is less complete, and the descent more slow; so that it may affect distant regions and elevated spots, the tracts of courynt intermediate to the place of its production and of its descent enjoying a complete immunity. Thus we may distinguish two kinds of epidemics—indigenous epidemics or endemics, which affect the districts corresponding to, or immediately adjoining, the place of origin of the miasm; and epidemics less intense and prolonged, which are brought from some distant point, and to which the term "peregrinating epidemics" may be applied. But independently of this mode of origin, epidemics may, and do, propagate themselves horizontally; for it is easy to conceive that the miasmatic air from which the water has been precipitated, redescending to the surface of the earth, tends to occupy the bottoms of valleys and depressions of the surface generally, whence, influenced by local currents, it may progress from any one place to another in its immediate vicinity. This double mode of migration being recognised, many points in the history of epidemics become intelligible. We can understand, for instance, the reason that epidemics propagate themselves in the direction of valleys, along the course of rivers and of the great highways of commerce which almost necessarily avoid high elevations, and also why they appear in marshy districts, in sea-ports, and in towns offering topographical conditions favorable to infection. We can understand the intensity of epidemics occurring in such places, and the tenacity with which they cling to them, when compared with dry and lofty regions. It enables us to explain, moreover, the possibility of the primary development of miasmatic epidemics in districts greatly elevated above the sea-line, so long as they do not exceed the limits that may be attained by air charged with miasmatic and watery particles; also the various modes in which epidemics progress—sometimes by ascending, sometimes by descending declivities; sometimes advancing, sometimes retrogressing. It furnishes us with an explanation of the greater noxiousness of the air after nightfall; for the earth, retaining its heat, still continues to give off exhalations, which, ascending, are rapidly condensed by the nocturnal cold peculiar to hot countries and marshy soils, and fall almost vertically, without having undergone any dilution, and are hence particularly pernicious. An explanation is thus also afforded of the absence of epidemics in the open seas, far from isles and continents, since the miasmata only reach such places after long migration, causing them to lose their concentration. Hence also the relative immunity of miasmatic epidemics in countries distant from porous soils; the constant influence of drainage in improving the health of districts, by occasioning the desication of the earth; the influence of prolonged cold in checking the progress of epidemics, and, in fact, effecting their entire abolition, until by the concurrence of favoring circumstances the contingent of miasmatic air is renewed, which has heretofore been explained by supposing that a hibernation of an epidemic occurs. Again, it accounts for the propagation of certain epidemics occurring sometimes in a direction contrary to that of the prevailing winds, the force of which, being contrary to the primitive direction of the miasma, may cut the curve of its descent, or may divide or shorten it, or, if the current be strong enough, may so dilute it as to render it harmless. The influence of rain may be of a similar nature; if moderate, it may increase the severity of an epidemic by augmenting the evaporation and the amount of miasmatic emanations, whilst an abundant rain may altogether remove it. It explains the constant association of epidemics with seasonal changes characterised by abundant evaporation. It explains the intensity and perniciousness of endemic affections as compared with peregrinating epidemics, or those coming from a distance; though it must be remembered that the deleterious influence is always felt by a particular population in proportion as it is new, and has not previously affected them. On this account peregrinating epidemics are usually very noxious, especially at their commencement, before any organic accommodation to the new conditions has had time to take place. Hence, also, it is not difficult to comprehend why epidemics diminish in intensity in proportion as they gain in extent; and, lastly, we are enabled to furnish an explanation of the circumstance that some countries enjoy perfect immunity from certain miasmatic epidemics, since such countries are subject to certain climateric conditions, or are distant from the countries where endemic diseases originate. The views of Dr. Poznanski appear to us to be founded on sound principles, and we have given them as nearly entire as the limits of our space would permit.

◆

THERAPEUTICAL USE OF ARSENIC IN PHTHISIS.

The question of the therapeutical use of arsenic in phthisis is of much practical interest. It has been the subject of an able report by M. Hérard, of the Academy of Medicine of Paris, in connexion with a previous communication from M. Moutard-Martin. M. Moutard-Martin, one of the nosocomial physicians of Paris, and an accomplished clinical observer, has studied with great care and in a severely experimental manner the physiological and therapeutical action of arsenic in phthisis. Two points of his researches have been to experimentalise with the remedy upon both private and hospital patients, and to exclude every other medicament from the treatment, so as better to distinguish the effects of the one under trial. According to M. Hérard, favorable effects are observed in the vast majority of cases. In the course of a few days only the patient revives, the eye shows new life, the complexion is better, the appetite is restored, and the patient even gains flesh. This beneficial action of arsenic is, however, observed in only one class of phthisical sufferers—those whose digestive organs have not undergone much impairment. In cases in which there is much impairment of the digestive functions, and in which vomiting and diarrhœa are already present, the remedy, far from doing any good, often increases this condition of the patient. This leads us to infer hat arsenic exercises no local or direct action in phthisis, and that its good effects are merely due to its influence upon the functions of nutrition. M. Hérard, however, is inclined to believe that some direct action is exerted upon the mucous membrane of the lungs, which serves to eliminate the remedy; and, in connexion therewith, he refers to the peasants of Lower Austria, of Styria, and of the Tyrol, who frequently make use of arsenic because it enables them to breathe much more freely when climbing up their mountains. With regard to the action of arsenic upon the functions of nutrition, M. Hérard thinks it is twofold: not only does it increase the appetite, either by a direct stimulating influence on the mucous membrane of the alimentary canal, or by its general tonic and fortifying action, which the digestive organs would be the first to feel; but it exercises another and most important influence, which consists in moderating the oxidation of tissues, and in thus impeding the process of denutrition, as has been shown by the experiments of Brettschneider, Schmidt, and Sturwage, and, still more recently, of M. Lolliot, house-surgeon to the Paris hospitals. This latter investigator has observed that the administration of arsenious acid in doses of ten milligrammes daily causes a lowering of the heat of the body, and a marked diminution in the quantity of urea. The form in which arsenic is administered, preferably to all others, by MM. Moutard-Martin and Hérard is the arsenious acid prescribed in the shape of pills or granules, each containing one milligramme of the substance. Seven or eight of the granules are administered at first; but the dose may be speedily carried to ten or fifteen milligrammes, very seldom to two centigrammes. M. Hérard asserts that with this precaution of dividing the daily dose, of never giving more than two milligrammes at a time, and, of administering the granules as often as possible immediately before the meals, no accident is ever seen to occur. It is very seldom that the treatment is suspended or modified through temporary sickness, vomiting, or diarrhœa. When the granules cannot be administered, an arsenical solution may be employed in small and increasing doses; and recourse may be had to arsenicated mineral baths, such as Bourboule, the Mont-Doré, &c. Whatever the form in which the remedy is exhibited, M. Hérard insists upon the necessity of suspending the treatment from time to time. In conclusion, M. Hérard is confident that M. Moutard-Martin's researches have had the result of establishing the perfect innocuousness of arsenic when properly employed, and its undeniable efficacy in certain forms of tubercular phthisis.

Medical Annotations.

"Ne quid nimis."

DR. PARKES ON THE RELATIVE POWER OF CERTAIN DISINFECTANTS.

This has lately formed the subject of a very carefully devised series of investigations by Professor Parkes at Netley Hospital, and the subject is one of such interest at the present time that we make no apology for dwelling upon it. It was, of course, a matter of vast importance to the War Office authorities to determine precisely the relative powers of different disinfectants, and notably of carbolic acid, and of the definite quantities required to obtain their full effects.

Three series of experiments were made of the different chemical agents under different conditions of temperature &c., and Dr. Parkes also records the influence produced in his own person by the sewage emanations. The experiments were numerous and of crucial character, and the results somewhat unexpected. The carbolic acid series occupy the highest position in the list, but the amount required is large, at least sixty grains of the crystallised acid being necessary for the solid discharge of a man daily at a temperature of 50° Fahr., and even then fæcal smell is not prevented, nor are the origin and development of vibriones entirely arrested. Dr. Parkes finds the liquid preparations more efficacious than the crystallised acids, and the impure preparations appeared more powerful than the pure. He says that no decided differences could be traced between the carbolic acid of different makers. Two kinds of disinfecting powder, though of very different composition, appeared practically about equal. It follows, we think, if disinfectants require to be used in such quantities as he found to be necessary, that the question of expense must practically tend to curtail their employment considerably. It comes to this after all, that we cannot by chemical agents altogether counteract the evil effects arising from sewage decomposition. Nothing but a good and properly constructed system of drainage is to be relied upon for our barracks and towns. The symptoms experienced by Dr. Parkes from inhaling sewage emanations during his experimental investigations are interesting on account of the care which he took to ensure that these were really due to this cause. The first effect he says, seemed to be local, on the throat and nose, as might be expected, resulting, he conceives, from a tolerably lasting effect on the nerves of smell and taste; this was attended by a slight increase in the quantity of saliva, and followed in from about thirty to fifty minutes, or sometimes sooner, by a feeling of nausea and sickness, without, however, actual vomiting. In addition to these sensations, there were symptoms indicating some implication of the general system; three or four hours after the inhalation there was chilliness, then headache and depression, and during the night slight fever. These symptoms often lasted from twenty to twenty-four hours; but there was no diarrhœa induced. From subsequent experiments Dr. Parkes concluded that, when carbolic acid was added in sufficient quantity to arrest all decomposition and prevent effluvia, these symptoms did not follow.

NEW MODES OF PREPARING OBJECTS FOR THE MICROSCOPE.

In Mr. Lockhart Clarke's essay on the Intimate Structure of the Brain, contained in the Philosophical Transactions for 1868, we read that Gerlach now hardens the cord in a solution of bichromate of ammonia of the strength of from 1 to 2 per cent. The sections are then put into a solution of 1 part of chloride of gold and potassium to 10,000 parts of water, slightly acidulated either with vinegar or hydrochloric acid, for ten or twelve hours; when the white substance becomes of a pale lilac while the grey substance is scarcely colored. They are then placed in a mixture of 1 part of hydrochloric acid to 2000 or 3000 parts of water for a few minutes. After this the sections are steeped for about ten minutes in a mixture of 1 part of hydrochloric acid to 1000 parts of 60-per-cent. alcohol, and then for some minutes in absolute alcohol; after which they are made transparent by means of creasote, and put up in Canada balsam. Mr. Clarke adds, "This is rather a complicated process." A much simpler method has been proposed by M. Ranvier in the last number of Dr. Brown-Séquard's *Archives of Physiology*, which consists in the employment of picric or carbazotic acid. This acid is only moderately soluble in water, and a saturated solution may therefore be employed. It possesses the further advantage of being very cheap. It is admirably adapted for all tissues containing much blood, and therefore for specimens of liver, lung, &c. It appears to act by effecting coagulation of the albuminous substances, though, unlike alcohol and chromic acid, it does not occasion any fusion of the constituents of the tissue. The red globules retain their form and characters extremely well. The portion of tissue required to be examined should be plunged into the solution, and after the lapse of twenty-four hours it will be found to have acquired sufficient firmness to permit of very fine sections being made with a razor. The saving of time by this method, as compared with the chromic-acid, is immense. The preparations will take color from carminate of ammonia, and may be preserved in glycerine.

A MEDICAL REVOLUTION IN SPAIN.

The Spaniards are determined not to do things by halves. Political changes have been followed by a wholesale revolution in scientific and medical teaching. The Government has proclaimed complete liberty of teaching in all the various branches of knowledge. Any Spaniard, of whatever age, sex, or position, may now open a school or college for instruction in the higher branches of letters and sciences; and, what is more, in all establishments thus permitted and sanctioned by Government the professors must be named by *concours*, or public competition. In regard to the teaching of Medicine and Pharmacy the reform has been almost as sweeping; and M. Zorrilla, who is the member of the Provisional Government entrusted with the Department of the Fomenta, has had it all his own way. Titles have been abrogated, the curriculum has been altered, &c. One of the most curious points in these changes has been the abolishment of Latin as a necessary preliminary attainment. El Señor Zorrilla considers that an acquaintance with Latin is necessary only for making "useless rhetoricians, plodding Latinists, and sterile argumentators." Indeed, according to the honorable minister—we do not say the "learned gentleman,"—Latin is an article of luxury, good only for those addicted to the study of antiquity.

THE first number of a new French periodical, entitled *Annales de Dermatologie et de Syphiligraphie*, under the conduct of M. le Dr. Doyon, has reached us. It contains articles on Gonorrhœal Rheumatism, by M. Fournier; on the Employment of Ice in certain Affections of the Testicle, by M. Diday; on Syphilitic Affections of the Uterus, by M. Rollet; on Diatheses in Dermatoses from a Therapeutical Point of View, by M. Guibout; a Bibliography; and a review of foreign journals. Amongst the principal Collaborateurs are Bazin, Baumes, Bergeron, Calvo, Devergie, Hardy, Hebra, Lailler, Lancereaux, H. Lee, De Méric, Richard, Rodet, Clerc, Bassereau, and others.

Reviews and Notices of Books.

The Causes and Treatment of Lateral Curvature of the Spine. By RICHARD BARWELL, F.R.C.S., Surgeon to and Lecturer on Anatomy at the Charing-cross Hospital. Enlarged from Lectures published in THE LANCET. pp. 179. London: R. Hardwicke. 1868.

THE substance of this work having already appeared in the columns of THE LANCET, it will be unnecessary for us to enter at any length into the views which Mr. Barwell entertains respecting the causes and treatment of lateral curvature of the spine. As might be anticipated by those who have taken the trouble to master Mr. Barwell's views on club-foot, the author's investigations into spinal curvature bear marks of great original thought. If not always successful in practice, his suggestions respecting the treatment of club-foot were ingenious, and the same may be said of the treatment laid down for spinal curvature.

Mr. Barwell follows the commonly received doctrine that rotation of the vertebræ precedes the actual curvature. The cause assigned for this rotation is novel, however, the author ascribing it entirely to the action of the serratus magnus, which he regards as the great muscle of inspiration, and therefore more developed on the right than the left side, and hence the frequency of right curvature. Curvatures thus produced he terms "respiratory curvature," whilst those induced by carrying weights unduly on one side—so commonly seen in nursemaids—he classes as "weight-bearing curvatures."

Mr. Barwell runs as violent a tilt against the ordinary spinal supports as he did in a former work against Scarpa's shoes, and other ordinary appliances for the treatment of club-foot. He maintains that rigid stays tend to produce the very deformity it is sought to cure; but he appears to us to forget how much immediate comfort patients suffering from weak spines derive from firm support. The sloping seat, upon which the author lays great stress as a curative means, may be all very well for strong-backed young women, whose friends fancy they are not quite straight; but we can imagine nothing more trying to a really weak spine. Nor do we see how the sloping seat can overcome the rotation which is so important a part of the disease. Gymnastics may do much for slight cases, and this is generally allowed; but we fail to see in what respect Mr. Barwell's course is better than that ordinarily pursued, and it is much more complex. With regard to apparatus, Mr. Barwell's contrivances certainly bear the palm for simplicity, and we hope for effectiveness. We quite agree with him in believing that much too heavy and complicated instruments are sometimes forced upon patients by surgical mechanicians, who too often usurp the charge of patients, and act as qualified medical men; at the same time, our faith in the efficacy of the jean bands, braced up with the elastic accumulators which form so prominent a part of all Mr. Barwell's contrivances, is at present not very great. The difficulty in obtaining so exact a fit as to prevent all slipping must be considerable, and the constriction to the trunk cannot fail to be irksome. Mr. Barwell must pardon us in venturing to doubt the efficacy of some of his contrivances. If the apparatus for curvature is really good—and it very probably is,—it will certainly come into use; and Mr. Barwell must not mind waiting a little while for his laurels, since *magna est veritas, et prevalebit*

Lectures on the Theory and Practice of the Ophthalmoscope. By HENRY WILSON, F.R.C.S., M.R.I.A., Assist.-Surgeon to St. Mark's Ophthalmic Hospital, &c. Dublin, 1868.

WE have great pleasure in calling the attention of those who are engaged in the study of ophthalmic diseases to Mr. Wilson's Lectures, a notice of which in these columns has been only too long delayed. We have read Mr. Wilson's book through with great care, and can confidently recommend it as containing the best exposition recently published in our language of this important mode of investigating disease.

The work commences with a brief but clearly written chapter on the Theory and Principles of the Ophthalmoscope, giving an account of the gradual mode in which the instrument at present in general use attained its development in the hands of Cumming, Helmholz, Ruete, and others. The principal varieties of ophthalmoscopes are then described, and the structure of the parts implicated in ophthalmoscopic examination—as the retina, choroid, and vitreous—are lightly touched upon. To this succeeds a very good section on the appearances presented by the healthy eye when examined with the ophthalmoscope. The succeeding chapter treats of the anomalies of Refraction; and in it the differential diagnosis of Hypermetropia, of Myopia, and of Astimatism by means of the ophthalmoscope, are more intelligibly and satisfactorily, and at the same time more fully given than we remember to have elsewhere seen. In the seventh chapter the appearances presented by the Optic Nerve in health and disease are described. The eigth and ninth chapters treat of the Pathology of the Retina, and these, with the tenth and eleventh, which are devoted to the Choroid, are very well written, and reflect great credit on Mr. Wilson's observation and reading. The twelfth and last chapter is taken up with the consideration of Glaucoma. The author limits himself almost entirely to the description of the parts referred to, and does not attempt to lay down any directions for treatment. His own investigations are everywhere supplemented by apt quotations from English and foreign writers.

The only part of the work we cannot praise is that in which most of those who have written on the ophthalmoscope have failed—namely, the illustrations, which, if not absolutely bad, are very indifferent—the figure of detached retina notably so; the vessels of the attached and detached portions are represented as continuous, which is certainly not the common appearance. Nor should we have recognised the drawing representing Bright's disease. This, however, is a secondary consideration; and for those who are desirous of having a compendious treatise at hand, to interpret the phenomena which come under their observation in using the ophthalmoscope, which is now becoming familiar to every practitioner, can have no better guide and teacher than these lectures of Mr. Henry Wilson.

ON THE ALLEGED POISONOUS QUALITY OF BEEF-TEA AND EXTRACT OF MEAT.

By Baron Liebig.

Although it is contrary to common sense to believe that the daily food of men and animals could possibly contain a substance injurious to the health, it was nevertheless to be expected that the experiments made by Dr. Kemmerich on the effect of beef-tea and its salts on animals would produce anxiety and fear in some weak minds; and indeed the article which appeared in *Once a Week*, entitled "A Word of Warning to Cooks," is a proof that such fears really existed. I believe, however, that a simple acquaintance with the experiments of Dr. Kemmerich will be sufficient to dispel them completely. The results of these experiments are of a very harmless character. Dr. Kemmerich made most of his experiments, not upon men, but upon graminivorous animals—viz., upon rabbits,—and only one experiment was made by him upon a dog. The broth was made from horseflesh, and injected into the stomach of the animals in progressively augmented quantities, the chief results of which are as follows:—

A rabbit weighing not quite two pounds, which had received the broth from one pound of horseflesh (equivalent to half an ounce of extract) remained perfectly well. It polished itself with its paws, was very lively, and no disturbance in the state of its health was afterwards perceptible.

A second rabbit, of two pounds weight, into the stomach of which the extract of one pound and a quarter of horseflesh had been introduced, deported itself in just the same manner; its pulse became more vigorous, its breathing slower, and it remained lively and healthy.

When, however, the doses were increased, and the extract of two pounds and of two pounds and a quarter of flesh were injected into the stomach of the rabbit, such quantities of concentrated animal food were evidently too much for the little graminivorous creature, which by such doses Dr. Kemmerich succeeded in killing, a result at which nobody will be surprised. It follows that Dr. Kemmerich could likewise have killed stronger animals with beef-tea; and it may be assumed that he would have killed even a man of 140 lb. weight (seventy times heavier than the rabbit) by a dose of beef-tea seventy times as large,—namely, by the broth of 140 lb. of flesh, equivalent to about 4 lb. of extract of meat. Less than a couple of pounds of extract would, however, scarcely have been sufficient, for one of the experiments of Dr. Kemmerich on a carnivorous animal contrasted with the experiments on the rabbits; he did not succeed in poisoning that animal with beef-tea.

It was a small but very strong terrier, which had taken the broth of four pounds of flesh (equivalent to two ounces of extract), which the animal seemed to enjoy considerably. As however the whole quantity was too much for it, it became necessary to inject the remainder into its stomach. Notwithstanding the enormous quantity of extract of meat which had been introduced by force, the terrier remained very comfortable and lively, and no symptoms of any disturbance of its health became manifest. Double the quantity of meat broth which killed the rabbit had not the least injurious effect on the little dog.

These experiments and the above calculations show sufficiently what is to be thought of the poisonous effect of beef-tea: it belongs to the category of cases where people have eaten *pâté de foie gras*, turtle soup, or oysters to such excess as to cause death; but no sensible person will ever dream of ascribing, on that ground, poisonous qualities to *pâté de foie gras*, turtle soup, or oysters.

The experiments of Dr. Kemmerich are described in his *Dissertatio inauguralis* for obtaining the degree of Doctor from the medical faculty at Bonn; and in connecting with his conclusions the meaning of the word "poison," he in fact succeeded in drawing to his work the attention of the public, which otherwise would probably have taken little notice of it.

Dr. Kemmerich ascribes the effect of beef-tea not to its aromatic and combustible ingredients, but to the potash salts which it contains, and of which it is well known that in larger doses they exercise an injurious effect on the organism; nevertheless—and this is a matter of great importance—potash salts are an element of all articles of food; they not only form the chief ingredients of the salts of all sorts of flesh, including the flesh of fish, but likewise of all other food, and of all the food of animals. The alkaline salts of bread, vegetables, and hay consist of potash salts, and with the exception of coloride of sodium (kitchen salt), soda salts are but rarely contained therein; in fact, it may safely be asserted that without the potash salts our food would be quite unfit for nourishment.

It does not follow, therefore, that these salts, when taken in excess, like any other—even the most harmless substance—might not eventually exercise an injurious effect. It is, however, preposterous to apply the meaning which we are accustomed to attach to the word "poison" to the effects of such an excess. It is surely quite absurd to connect this meaning with substances which we daily take in our food, and which are quite indispensable to our existence.

Dr. Kemmerich himself says (p. 31),—"I do not think of the possibility that beef-tea, in the form in which it is used for household purposes, could be the cause of poisoning; it therefore does not require a medical warning to protect from poisoning with Liebig's extract of meat." He further says:—"In medical practice, wine, ether, camphor, and musk are eminent analeptica (invigorating and refreshing remedies). Compared to these giants of medicine, beef-tea modestly occupies a subordinate position. If, however, it be necessary to preserve the exhausted body from protracted illness, then there is no other remedy in the whole rich store of medicine which can afford such assistance for regenerating the diseased organism as repeated doses of beef-tea."

One of the three theses defended by Dr. Kemmerich, on his promotion before the medical faculty at Bonn, is worthy of observation by the British Navy. It runs thus:—

Thesis 2. "The best remedy against scurvy is beef-tea, or Liebig's extract of meat."

Munich, Nov. 1868.

Foreign Gleanings.

THE ALKALINE SULPHITES.

Now that Lister's antiseptic method has found so much favor, it would be well to turn to Polli's system. Starting from the current notion of the existence of zymotic diseases, the Italian professor gives large doses of the alkaline sulphites in these complaints. He considers that these salts act by modifying the morbidly fermenting matters, the economy being then able to resist their noxious influence. Dr. Ferrani has published two cases of pyæmia in the *Annali* of this year wherein he succeeded in arresting the disorder. One was the result of the bite of a dog on the knee; the other, a case of amputation of the thigh. In the first the sulphite of magnesia was given (about two drachms a day) after pyæmia had set in; in the second, before the septic symptoms had occurred: in both successfully. Dr. Ferrani observes that a sufficiency of water should be given with the sulphite of magnesia, as it requires twenty parts of water for its solution, sulphite of soda requiring only four. Acid drinks should be avoided. Let those surgeons who now so steadily follow Lister's plan give the sulphites also; they will then, according to Pasteur's and Polli's theories, attack the enemy on both flanks

DERBYSHIRE NECK.

Dr. Lücke, of Berne, has lately published, in the *Berliner Kl. Woch* (Dec. 28th, 1868), an article in continuation of a former paper inserted in the same journal, touching the method of treating hard goitre by injections of strong tincture of iodine into the parenchyma of the tumour. In small goitres, one puncture at a time, with the syringe of Pravaz half filled with tincture, seems enough; in larger growths, two punctures may be made at the same time. These injections should be renewed at intervals, which the author cannot fix beforehand. If the local and general reaction is not considerable, the operation may be pretty often repeated. The reaction may be very powerful, and it will therefore be proper not to attempt the injections when the patient is in danger of being asphyxiated by the pressure of the tumour, Dr. Lücke mentions cases where reduction of the growth took place very rapidly; and he congratulates himself on his success. When, from its mobility, the tumour cannot easily be punctured by the canula, the author advises the use of a continuous current by means of needles implanted in the parenchyma; but this method has not been very successful in his hands. Large masses of strumous glands might also be treated by injection of tincture of iodine into their interior.

OVARIOTOMY IN FRANCE.

M. Kœberlé, of Strasbourg, has recently published in a *brochure* the results of his experience of ovariotomy. Besides the interest which attaches to the subject, and to the views of a surgeon who, of all Frenchmen, has the largest experience of ovariotomy the pamphlet presents an excellent statistical novelty in the shape of tinted diagrams, showing at a glance the results of the various operations. M. Kœberlé has now performed ovariotomy sixty-nine times, and exactly two-thirds of the cases have been successful. One point especially deserves notice, which is, that out of the last twenty-two cases four-fifths have been attended by success, or, in other words, five only terminated in death. We thus have unmistakable evidence of the benefit derived from the skill and improvements which are obtained by experience. It is also of much practical value to note that the mortality has been in direct ratio to the duration of the operation.

CATARRHUS VESICÆ.

This disagreeable chronic complaint is often very obstinate; it may therefore just be stated that M. Mallez has found the following solution injected *into the bladder* very efficacious: water, ten ounces; tincture of iodine, forty-five drops; iodide of potassium, fifteen grains. When the pain is very annoying, add fifteen grains of extract of belladonna to the above. He has also employed carbolic acid, nitrate of silver, and hyposulphite of soda, with advantage.

News Items, Medical Facts, &c.

Secondary Effects of the Viper's Venom.—Messrs. Chéron and Goujon communicated to the Academy of Sciences of Paris, at a late meeting, a very interesting experiment. The ear of a healthy rabbit was subjected to the bite of a viper, and the former died thirty hours afterwards. From the œdematous soft parts around the bitten spot as much as from two ounces to two ounces and a half of serum was easily obtained. It emitted much fetor, was colored red by blood-discs, and contained a few white globules. It did not coagulate by nitric acid or heat. About half a drachm of this fluid was injected under the skin of another healthy rabbit. One hour and a half afterwards the animal was found to present a cold surface; it walked lame, and half an hour afterwards it died, during severe convulsions. The result of this experiment would show some analogy between venom and virus. It is a pity the gentlemen above named did not inject under the skin of a healthy animal the blood of the first rabbit, and especially that of the second; the result would have shown in what ratio the mass of the blood becomes contaminated. Nor should future experimentalists omit, under the same circumstances, to go on inoculating to the fourth or fifth generation, in order to find out whether the fluids retain the same contaminating power, or whether this power diminishes by successive transmissions.

The Medical Congress of Venice.—The last meeting of this Congress, which was attended by delegates of the provincial committees and many individual members of the Italian Medical Association, took place on the 18th October, and after a week of most useful labors touching various professional questions, both as regards the relations of medical men to each other and to the Government, the Congress separated, highly pleased with the success of this gathering. The hospitalities offered a great contrast to the cold and spiritless reception given by the *lively* French to their visitors in 1867: the Venetians vied with each other in entertaining in the most liberal manner their Italian brethren, and showed themselves worthy imitators of the profession in Dresden, who this year welcomed their friends in so tasteful and brilliant a manner. The next Italian Congress is to be held at Rome, *if possible*; or at Bologna, in case the eternal city is not then *annexed*.

The Endotoscope.—This instrument is contrived for the study of the movements of the membrana tympani. These movements, according as they more or less deviate from the physiological standard, will indicate any irregularity in the middle, and even internal ear. The ordinary and healthy oscillations of the membrane are, as is well known, excited by deglutition, expiration, screaming, blows, efforts, and the contraction of some of the muscles connected with the ossicula auditûs. Accidental oscillations are, on the other hand, produced by insufflation of air through the Eustachian tube, and the catheterism of the same. Now, the instrument in question is simply of a V shape, one stem of which enters the meatus externus, whilst the other tapers towards its extremity. At the bend is some colored fluid, which rises and falls according to the oscillations of the membrana tympani. At least, this instrument has the merit of simplicity.

Tracheotomy in Croup.—Dr. Jacobi records his experience of tracheotomy for croup in an article in the *American Journal of Obstetrics*. He has operated in sixty-seven cases, and in thirteen recovery took place. The after-treatment in some cases was tedious, and in four cases the cause was peculiar. The removal of the tube from the trachea, after the second week, was followed by alarming dyspnœa, at once relieved by re-introducing the tube. The cause was found to be the "presence of polypoid excresences, sometimes numerous, from the size of a pin's head to that of a pea and more, originating on the margin of the tracheal wound, in one case on the lower part of the sore larynx itself. It required a great many applications of nitrate of silver, or subsulphate of iron, to destroy them. Their disappearance would instantly relieve the symptoms, and allow of the final removal of the tube from the trachea."

Intra-Uterine Injections.—These have warm supporters and very determined opponents. Lately, M. Gantillon proposed an ingenious way of practising such injections, which M. Courty, of Montpellier, deprecates with all his might. Now comes M. Pajot, Professor of Medicine at the Faculty, who says that he uses them very successfully in uterine catarrh. He uses a syringe the size of the little finger, puts into it as much of a solution of nitrate of silver as will fill a thimble, and fixes to the syringe a very slender, long, and curved canula, which moves freely in the cervix. A wooden speculum filled with water is used; and by these means the injection is prevented from having any disagreeable consequences.

Lady Doctors.—Mrs. Nadidja Suslava, who lately obtained the diploma of Doctor of Medicine at Zurich, studied principally at Vienna, where she attended lectures, not as a registered student, but as a guest. The Faculty had at that time refused to recognise her as a regular pupil. The present director of the school is, however, more gallant, as he has just granted registration to Miss Laura, said to be the daughter of a New York barrister. This lady is anxious to study diseases of the ear, and is an assiduous pupil of Professor Pollitzer; she attends, however, other lectures and is a very frequent visitor in the dissecting room.

Dilatation of the Urethra.—On the occasion of a new instrument for forcible dilatation being presented to the Academy of Medicine, M. Chassaignac protested with great warmth against the use of such instruments, considering them highly dangerous, and holding the opinion that gradual dilatation was the preferable course. He considered that the Academy should not lend the weight of its authority to such exhibitions. M. Ricord, the president, who through courtesy had himself presented the instrument, fully concurred with M. Chassaignac, and joined in the condemnation of the method of forcible dilatation.

Local Use of Arsenic.—Some of the Italian physicians are using arsenic locally in certain structural diseases, it is asserted, with great benefit. Dr. Tassi, for instance, in lupus exedens, syphilitic and scrofulous sores, uses a weak solution of arsenic to the diseased surface. D'Ormea, of Bologna, uses the same remedy in epithelioma.

Phenic Acid in Syphilis.—Dr. Minteforte (in the Italian *Journal of Veneral Diseases, &c.*) recommends the application to syphilitic ulcers of a soluion of phenic acid in water, 5 parts to 100. Dr. Fidele de Fieri extols the deuto-phosphate of mercury, one grain a day, continued for two months, in tertiary syphilis.

Dr. Cooper, of Philadelphia, recommends Tonka Bean in Whooping-cough. The dose is five drops of fluid extract in water every three hours, increased to eight or ten drops. The bean contains the active principle of clover-tops—*coumarin*.

Anthrax.—Guiseppe, of Milan, declares himself to have been especially successful in the treatment of anthrax by the topical employment of perchloride of iron in conjunction with incisions.

PRINTED AND PUBLISHED BY
Wm. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, JR., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 3. NEW YORK, MARCH, 1869.

Lectures

ON THE

PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM;

AND ON THE

TREATMENT OF ORGANIC NERVOUS AFFECTIONS.

BY C. E. BROWN-SEQUARD, M.D., F.R.S.,

Fellow of the Royal College of Physicians of London; Member of the National Academy of Sciences (U. S.) Etc.

LECTURE I.

ON SPINAL HEMIPLEGIA.

(Concluded from February No.—p. 69.)

Characteristic symptoms of spinal hemiplegia.—Cases of wound and other kinds of lesion of the spinal cord having produced in the limbs, the face, and the eye the paralytic, anæsthetic, hyperæsthetic, and the principal vaso-motor symptoms of spinal hemiplegia.—Cases of incomplete spinal hemiplegia.—Comparison of spinal with cerebral hemiplegia.—Treatment of spinal hemiplegia.

THE following case—the subject of which was a French military surgeon—gives some of the most characteristic symptoms of spinal hemiplegia; but is, unfortunately, silent as regards many other symptoms. It has, however, this rare value—that the author, Dr. N. P. Schveing, has observed the symptoms in himself. The case is related by him in his inaugural dissertation presented to the Paris Faculty of Medicine on the 3rd of July, 1852. He states that what he observed upon himself is just what I have found in animals after the section of a lateral half of the spinal cord in the cervical region. I only give a summary of his case, passing over some useless details.

CASE 4. *Fracture of the first two dorsal vertebræ, followed by pressure on the left side of the spinal cord; paralysis of voluntary movement on that side, and anæsthesia on the right side.*—In the night of Dec. 3rd, 1849, Dr. S—— was thrown from a dog-cart into a ditch seven or eight metres deep. He struck the left side of his back against the ground, and the dog-cart fell upon him and violently bent his body forward. On striking the ground he felt a strong cracking, and a deep-seated pain in the dorsal region of the spine, and had also a voluptuous sensation similar to that of coition.

In a few seconds he had a sensation as if both it his thighs were dislocated, and as if his legs were deviated to the left. He was left helpless for two hours on the frozen ground; after which, amid great difficulty and much suffering, he was carried to the neighboring town. He was then in the following condition:—

There was a fixed and unbearable pain, increased by the least movement, located in the superior third of the dorsal region of the spine. A not less intense pain existed in the nape of the neck and in both forearms. The spinous processes of the first two dorsal vertebræ were depressed, and deviated to the left of the median line. The research for crepitation was, very rightly, abstained from.

On the right side of the body there was incomplete anæsthesia, increasing in intensity from the clavical down to the mammary region. Below this last region there was an absolutely complete loss of feeling, occupying the whole half of the trunk and of the scrotum, the testicle and the lower extremity. In the trunk this anæsthesia was limited, in front and behind, by the middle line.

On the left side of the body there was incomplete paralysis of motion in the arm, with perfect loss of motion of the extensors of the fingers, and an absolutely complete paralysis of the lower limb. In the iliac fossa of that side there was a feeling of heaviness.

In contrast with the excessive lack of tonicity, the extreme flabbiness of the muscular system generally, there was a great tension of the abdominal wall, and the penis was in a state of strong and painful priapism, which lasted several days. Both the bladder and the rectum were completely paralysed.

A deep-seated painful sensation, apparently com-

side.—J. S——, Indo-European, aged thirty-five, was admitted into the hospital on the 27th of January, 1860. He had fallen from a height of eight or ten feet. When he recovered his senses, the head and neck excepted, he seemed to be paralysed everywhere. Respiration was diaphragmatic, the chest remaining without expansion. After a prolonged period, during which the symptoms varied much, he was, in June, in the following condition:—In the left side almost the whole of the upper limb, the trunk from the breast downwards, and the lower limb, were entirely deprived of tactile sensibility, of the feeling of tickling, of sensibility to painful impressions, and of the power of distinguishing heat from cold. Almost every kind of irritation of that side gave a sensation of heat. The motor power and the muscular sense were hardly diminished in these parts. On the right side, the trunk and limbs, the arm especially, were paralysed; while all the kinds of sensibility persisted unaltered in them.

In October, the patient stated that all along the posterior parts of the trunk and lower limb, and in the sole of the foot, sensibility was still in abeyance; while in the anterior parts of the trunk and lower limb, and in the dorsum of the foot, sensibility had returned. The motor paralysis was much diminished. He walked quite steadily.

Without entering into a discussion of the features of this case as regards the condition of the spinal cord which gave rise to the symptoms, I will say that a concussion of the cervical part of this organ occurred, followed by congestion, if not some slight inflammation, located chiefly in the right lateral half of that nervous centre. The case offers the essential symptoms of spinal hemiplegia: anæsthesia to impressions of pain, touch, tickling, and temperature, with conservation of voluntary movements and the muscular sense in one side, and paralysis of voluntary movements and persistence of the four kinds of sensibility just named, in the other.

In the two or three following cases a few of the symptoms of spinal hemiplegia have been observed, with some complication, however, due to the existence of disease in both sides of the spinal canal, instead of in one only, as in genuine cases of spinal hemiplegia. The first of these cases has been published by Dr. Russell, of Birmingham. I only give a short summary of that case.

CASE 8. *Complete paralysis of the right limbs; anæsthesia of the left lower limb and dulness of feeling in both upper extremities; rapid recovery.*—A scrofulous girl, twelve years old, was attacked with pain in the neck. Almost suddenly the pain increased, and the left arm and leg "went to sleep." Dr. Russell found her lying on her back, with a complete paralysis of the right limbs, in which sensibility seemed little, if at all, affected. On the other hand, the left lower extremity was moved as freely as her awkward position and her fear of change of posture permitted, and so was the forearm; but the shoulder muscles seemed feeble. Sensibility was almost abolished in the left lower limb, but in the upper one was little affected. A few days later sensibility in the left arm was dull, and Dr. Russell thought it was so also in the right arm. She quickly recovered sensibility, and a few months later motion also.

Although Dr. Russell discovered evident bony deposit in the region of the laminæ of the second and third cervicle vertebræ, it is clear from the symptoms, and especially from "the dulness" of sensibility in both arms, that there was pressure lower down on the spinal cord on the two sides, but much more on the right than on the left.

There is this resemblance between this case and the following, that both sides of the cord, or at least roots of nerves on the two sides, were injured, but a great deal more on one than on the other side. In the case I am about to summarise (published by Dr. Frazer, of the London Hospital) some of the vascular cephalic symptoms of spinal hemiplegia were observed.

CASE 9. *Paralysis of the right limbs; and of the left upper limb: constriction of the pupil and elevation of temperature in the head on the right side; diminution of sensibility in the left foot.*—H. B——, aged six, had his neck trodden on by his sister, a grown-up woman. He had been to school since the accident, but had gradually got worse. His right upper and lower extremities were both weakened; the left arm also. His left pupil was much larger than the right, but the latter acted to a limited extent. Twelve days after admission he had much improved, and could use his left hand well, and his right hand considerably. He walked with a limp, dragging his right foot a little. He was quite positive as to the relative diminution of sensation in the right arm. His right ear was decidedly hotter than the left. In the shade the left pupil was twice the size of the right. A few days later the temperature of the left ear was found to be 82°, that of the right 84°. Sensation in the left foot was very much less than in the right, both as regards pricking and tickling.[*] A year later he was still partially paralysed as regards motion in the right limbs, but there was no appreciable loss of sensation and the pupils were almost equally active.

Obscure though this case is, owing to our ignorance of the kind, seat, and extent of the lesion in the spinal cord and its nerves, it is clear from the symptoms that there was some injury on the two sides, but much more on the right side. There was an evident paralysis of the vaso-motor nerve of the eye and ear on the side chiefly injured in the cord, the side where the paralysis of movement in limbs always exists in spinal hemiplegia. It is much to be regretted that the condition of the various kinds of sensibility was not thoroughly investigated in all parts of the body, head, trunk, and limbs.

In a case I had the opportunity of seeing, there was also, as in the two preceding, an injury in both sides of the spinal canal, producing therefore some symptoms in addition to the characteristic features of spinal hemiplegia. I much regret not to be able to give more details of this case, as it is a most important one, notwithstanding the complexity of symptoms. The patient, although urged to return, only came once to my consultation at the National Hospital for the

---

[*] I do not mention what is stated of the temperature of the legs (the left 87°, the right 85°), because the patient had been sitting a short time before near the fire, and this circumstance throws doubt on the results of the examination.

Paralysed and the Epileptic, and I had not time to take his case so completely as I should have liked.

Case 10. *Paralysis of both right limbs and of the left upper limb; anæsthesia of both left extremities and partly of the right upper one; paralysis of the vaso-motor nerve of the face and eye, on the right side.*—H. S——, aged forty, had enjoyed good health up to the 24th of March, 1862, when he fell from the top of a staircase, and was violently struck on the back of his neck. He lost consciousness at once, but recovered his senses in twelve or fifteen minutes. He then found that he was completely paralysed of both limbs on the right side, and also of the left upper limb, but not of the left lower one, which he could move easily. His breathing was so difficult that he thought he would die from suffocation. There was a complete cessation of respiratory movements in the right side of his chest. He could swallow, but with difficulty; his neck was stiff, very painful, and he was not able to move it; his head was drawn forwards; his intellect and senses were not in the least impaired; his bladder was weak, but not paralysed. There was neither a wound nor considerable swelling in his neck. He remained in this state, almost without amelioration, more than two months. He was then brought to my consulting-room at the National Hospital for the Paralysed and the Epileptic.

I found, first, a very nearly complete paralysis of the left upper limb and of the whole right side, from the neck downwards (limbs and trunk, including the diaphragm); secondly, an almost complete loss of sensibility to touch, tickling, heat and cold, and painful impressions in the trunk and both limbs, on the left side; while on the right side these four kinds of sensibility were only slightly diminished everywhere, but more so in the neck and shoulder than elsewhere. The temperature of the right lower limb was higher than that of the left one. The face also on the right side was warmer than on the left. The right pupil was constricted, and the eyelids were less widely open on this side than on the left. He was able, however, by a great effort of will to open the right eye very nearly as much as the other. His bowels were extremely constipated. He had no erection, and had lost his sexual appetite. He complained of having in both shoulders very acute pains, which were purely subjective, as pressure or movements did not increase them. There were no other subjective sensations. There had been since the accident more gain as regards movements than as regards sensibility.

This case is, indeed, a very remarkable one in many respects. The injury to the spinal cord, whatever had been its nature (most likely there was a hæmorrhage in the spinal cord), was situated above the origin of the nerves of the upper limbs, as it was in the case of T. R——, and in the case of Mr. Dundas; so that there was not that peculiar symptom of an almost equal anæsthesia in both upper limbs, which can be observed in cases of disease in one of the lateral halves of the cord in its cervico-brachial enlargements. But there was in this case a lesion which, besides occupying a transverse zone of a lateral half of the spinal marrow, altered also part of the other half; as was proved,—first, by the absence of hyperæsthesia, and even some anæsthesia, in the side most paralysed of voluntary movement (the right); secondly, by the paralysis of the left upper limb. Another remarkable feature of this case was that the face and eye, on the side most injured in the cord, presented the effects of a paralysis of the vaso-motor nerves of these parts. This is the only case I know of in which an injury so high up in the cervical region of the cord has produced these effects.

Another remark, worthy of attention on the part of physiologists and practitioners, is that, notwithstanding the cutting off of the nervous supply to the respiratory muscles (there was no respiration at all in one side of the thorax, and a diminution of that function in the other side), the patient has lived on, and has improved as regards sensibility and voluntary motion.

Another case, like the three preceding in this respect, that the lesion was not limited to one-half of the spinal marrow, was quite recently published by an able physician of Lyons (France), Dr. Perroud. I only give a summary of the case.

Case 11. *Loss of voluntary movement in the limbs on the right side; loss of sensibility on the left side.*—F. V——, aged twenty-six, was admitted on the 31st of October, 1860, into the Hôtel Dieu. Three months ago, after having slept in a damp place, he had some numbness in the two little fingers of the right hand. In a few days this numbness extended to the right forearm, which became weak. A few weeks after, the right leg and thigh also became weak, retaining, however, their sensibility almost entirely, while the left inferior limb retained its muscular power, but lost its sensibility. On admission, the patient was in the following state:—

On the left side motility remained in both limbs, where the muscular sense was also normal, and nutrition without alteration; but sensibility was nearly entirely abolished on a large surface. This anæsthesia demonstrated with pins and the compasses, occupied all the left lower extremity, and the whole left lateral half of the trunk up to the armpit, limited in front and behind by the middle line. Tactile sensibility seemed to persist in the left upper limb, but the patient felt the electric shocks less there than in the right upper extremity.

On the right side movements were considerably diminished in both limbs. All the muscles of the hand and forearm were completely paralysed. In the arm the paralysis existed chiefly in the triceps, and least in the muscles of the shoulder. The foot and leg were completely paralysed. The muscles of the thigh were notably paralysed, flexion of the leg on the thigh being almost impossible. The muscles of the pelvis seemed to be in a normal state. There was no atrophy of the paralysed muscles. Walking was extremely difficult, notwithstanding crutches. Sensibility remained in the inferior limb, and in the lateral half of the trunk, on that side (the right); but tactile sensibility seemed to be a little diminished on the hand and forearm on that side. Electricity was felt normally.

The symptoms went on increasing, and when the patient left the hospital, on the 19th of June, 1861, the paralysis of motion and anæsthesia had extended, so that both upper limbs were completely paralysed, and both lower ones almost completely.

I will not discuss here the nature of the disease of the spinal cord in this case. I think it belongs to that rather numerous group of cases in which an autopsy alone can reveal what is the real organic alteration. But it presented at first the most essential features of spinal hemiplegia—anæsthesia in one side, and paralysis of voluntary movement on the other side. I will not now say more about this case, as I must again speak of it in a few moments.

Dr. M. Rosenthal of Vienna, has also recently published two interesting cases of disease of a lateral half of the spinal cord, one of which is a case of hemiparaplegia, the other of spinal hemiplegia. I have only seen a summary of these cases. The one relating to the subject of this lecture I translate literally.

Case 12. *Paralysis of movement with conservation of all kinds of sensibility in the right side; loss of sensibility to touch, to temperature, and to painful impressions, with conservation of voluntary movement in the left side.*—A coachman, aged twenty-seven, took cold while his body was overheated. He soon after had, first in the right foot, then also in the right arm, hyperæsthesia, which was promptly changed into anæsthesia. Two months later, after symptoms of irritation, the left extremities were attacked with paresis. Six months after the beginning of his affection the patient was admitted into the hospital.

He then had tactile anæsthesia and analgesia (loss of sensibility to painful impressions) in the right side, from the end of the lower limb up to the level of the shoulder blade, occupying the whole right side, except the sacro-coccygean region. The sense of temperature was also lost on that side, where the reflex power was slightly increased. The motor power remained normal in that side, where he often had, in the anæsthetic parts, a very disagreeable feeling of a current of burning heat.

On the left side sensibility, including the sense of temperature, was normal, while all the voluntary movements were diminished, and in some parts quite impossible. The reflex movements existed, but the faradic contractility of isolated muscles, and the galvanic excitability, especially that of the radial nerve, were markedly diminished.

The diagnosis was that a portion of the left lateral half of the spinal cord was in a state of inflammation, brought on by the influence of cold. The treatment consisted in the use of iodide of potassium, tepid baths, and ascending galvanic currents directed from the trunk of the nerves to the spine, with cutaneous faradisation of the anæsthetic parts. After seven weeks motility was essentially improved, but sensibility was not. Anæsthesia began to yield in the periphery only after ten weeks; but after three months of treatment, motility and sensibility were both restored.

Whether there was really an inflammation of a limited part of the left lateral half of the spinal cord, in this case, as Rosenthal thought, or only a considerable congestion, I cannot decide, as I do not know all the details; but it is, anyhow, an important fact that the patient recovered so completely after having had such a degree of anæsthesia on one side, and of paralysis of voluntary movement on the other side. I will not say more about this case, as I shall have to revert to it before the end of this lecture.

I now come to two cases in which there has been an autopsy. The first of these, the celebrated case of Dr. Hugh Ley, about which more than one great mistake has been committed, is a well-marked instance of spinal hemiplegia. It has been published in the shape of a letter addressed to Sir Charles Bell. I will only give a summary of its essential parts.

Case 13. *Paralysis of voluntary movements with some hyperæsthesia on one side; loss of sensibility, without paralysis, in the limbs and trunk on the other.*—Mrs. W—— was attacked with fever and headache subsequently to a profuse hæmorrhage which occurred after her delivery. On one side of the body there was defective sensibility, without, however, any corresponding diminution of power in the muscles of volition, so that she could hold her child in the arm of that side so long as her attention was attracted to it; but if surrounding objects withdrew her notice from the state of her arm, the flexors gradually relaxed, and the child was in hazard of falling. The breast, too, on that side partook of the insensibility, although the secretion of milk was as copious as in the other. She could see the child sucking and swallowing, but she had no consciousness, from feeling, that the child was so occupied. Turgescence of that breast produced no suffering, and she was unconscious of what is termed the "draught" on this side, although that sensation was strongly marked in the other breast.

On the opposite side of the body there was defective power or motion, without, however, any diminution of sensibility. The arm was incapable of supporting the child, the hand was powerless in its grip, and the leg was moved with difficulty and with the ordinary rotatory movement of a paralytic patient; but the power of sensation was so far from being impaired, that she constantly complained of an uncomfortable sense of heat, a painful tingling, and more than the usual degree of uneasiness from pressure or other modes of slight mechanical violence.

At the end of a few months she again proved pregnant. Her delivery was easy, but she soon complained of numbness on both sides. She became insensible, and sank completely comatose.

Upon examination of the body no positive disorganisation of the brain could be detected, but there was some thickening and increased vascularity of the membranes, especially opposite the seat of her original headache.

Unfortunately, owing to the ignorance of the essential characteristics of spinal hemiplegia, this case was mistaken for a case of cerebral hemiplegia, and the spinal cord was not examined. In one respect this case seems to have presented a feature which is the reverse of what I have announced to exist in spinal hemiplegia—i. e., there was an appearance of loss of the muscular sense in the anæsthetic limbs. The appearance was deceptive enough to lead Sir Ch. Bell to make use of the case as exhibiting clearly what he considered as due to the loss of the muscular sense. The patient could only, it is said, "hold her child in the arm" of the anæsthetic and non-paralysed side "so long as her attention was attracted to it." No doubt it would have been so if she had lost the muscular sense, but I ought to say that a loss of sensibility in the skin, joints, and other parts of the arm, such as existed in this case, was quite sufficient, notwithstanding the persistence of the muscular sense, to allow "the flexors of her arm gradually to relax when her attention was called to surrounding objects," and she ceased noticing the state of the arm holding the child. At any rate this case would be the only one of spinal hemiplegia that I know in which there would have been a loss of the muscular sense on the anæsthetic and non-paralysed side, if really there was such a loss.

We have not to address to the author of the following case the same reproach as to Dr. H. Ley—i. e., to have neglected to open the spine. But, if in this next case the condition of the spinal cord has been investigated, we have, on the other hand, to regret that the details of the case have not been published. The patient has been under the care of a distinguished physician of Bordeaux, Dr. Gintrac; and the few lines we give on the case were written out by Dr. Oré.

Case 14. *Paralysis of movement of the two left limbs; anæsthesia of the right side; clot of blood in the left half of the spinal cord.*—A patient was admitted into the St. André Hospital, at Bordeaux after having been suddenly seized with loss of movement in the two left limbs, persistence of sensibility. On the right side, on the contrary, sensibility was very obtuse. On dissection, a clot of blood was found located in the left half of the cervical region of the spinal cord.

This case being yet the only one I know of in which an autopsy has shown a lesion where the theory locates it, in the complete spinal hemiplegia,[*] it is, indeed, much to be regretted that the full history of the symptoms and of the post-mortem appearances have not been reported. So far as the above few lines on that case go, they, however, show postively in man what I have so often seen in animals—i. e., that a lesion of the cervical part of the spinal cord on one side produces paralysis of motion in that side, and anæsthesia in the other side.

I intended to relate several other cases of spinal hemiplegia, especially three cases published by Boyer, by Dr. C. B. Radcliffe, and by Mr. South, and one seen by myself; but I have already considerably outrun the ordinary limits of a lecture, and I must therefore keep these cases for another occasion. For the same reason, I will abstain from giving now, as I had intended to do—

1st. The demonstration that a disease or an injury—limited entirely to a lateral half of the spinal cord, or occupying a part of the two halves of that organ, but one of them much more than the other—was the cause of the symptoms observed in the case I have related.

2nd. The reasons why cases of hemiplegia from disease of the spinal cord ought to be grouped into two distinct classes of spinal affection, one bearing the title of *spinal hemiplegia*, and the other that of *incomplete spinal hemiplegia*; the existence or absence of a peculiar symptom serving to characterise these two kinds of paralysis.

3rd. The diagnosis between hemiplegia from brain affection, and each of the two kinds of hemiplegia from disease of, or injury to, the spinal cord.

4th. The prognosis and the special rules of treatment of spinal hemiplegia.

[*Errata.*—In Dr. Brown-Séquard's Lecture on Spinal Hemiplegia the following errors require correction:—Page 1, 2nd column, 4th line from bottom, instead of "a small zone, or dividing the whole lateral half," read "a small zone of, or dividing transversely, a lateral half." Page 5, 2nd column, 2nd line of 1st paragraph, instead of "greatest injury," read "seat of the injury." Page 66, 2nd column, 39th line from top, instead of "painful sensations," read "painful impressions." Page 68, 1st column, 23rd and 24th lines from bottom, instead of "the sphincter of the bladder and the rectum," read "the sphincters of the bladder and of the rectum." Page 69, 2nd column, 8th line from top, instead of "producing more," read "produces at first more."

LECTURE II.—Part I.

ON ORGANIC AFFECTIONS AND INJURIES OF THE SPINAL CORD, PRODUCING SOME OF THE SYMPTOMS OF SPINAL HEMIPLEGIA.

Facts proving that a lesion in one of the lateral halves of the spinal cord produces: 1st, paralysis of voluntary movements in the same side; 2nd, anæsthesia to touch, tickling, painful impressions, and changes of temperature in the opposite side; 3rd, paralysis of the muscular sense in the same side.

Gentlemen,—Before I proceed to treat of the subject of this lecture I must keep a promise given at the end of the preceding one. I stated that I would soon try to prove that a disease or an injury, either limited to a lateral half of the spinal cord in the cervical region, or occupying transversely a great part or the whole extent of such a half and also a small part of the other half, was the cause of the symptoms observed in the various cases I have related. To give this demonstration, I will show, by a study of each of these symptoms, that they are exactly those which must exist in cases of an alteration limited to a lateral half of the cervical part of the spinal cord, or extending partly also to the other half.

1st. *A lesion in one side of the spinal cord produces a paralysis of the voluntary movement in the limbs and trunk on the same side.*—Since the time of Galen, who made experiments on this subject, it has been almost universally admitted that a lesion of a lateral half of the spinal cord produces paralysis in the same side in the trunk and limbs. In this century many experimenters, among whom I will name Sir Astley Cooper, have repeated one of the experiments of Galen, consisting in a section of a lateral half of the spinal marrow. Most of the vivisectionists state that voluntary movements are completely lost in all parts whose nerves arise from the side of, and behind or below, the transversal section of a lateral half of the spinal cord. Experiments on frogs have led Stilling to deny the exactitude of this assertion. My own researches on dogs, rabbits, and other mammals have, long ago, given the following results:—1st, that voluntary movements are not completely lost behind and on the side of the injury; 2nd, that there is a weakness in the voluntary movements on the opposite side two facts which give strength to each other to prove that the conductors serving for voluntary movements, in some animals, partly decussate in the spinal nervous centre. But clinical facts leave no doubt that, in our species, there is no such decussation in that nervous centre. I need not prove this assertion by reporting the details of these cases, as I shall have hereafter, in this and in other lectures, to give a pretty full account of most of these cases. I will simply say that they show that a lesion, either by a wound (as in the case by Begin) or by a hæmorrhage (as in the case by Mr. S. Solly), or by a tumour, or a pressure by a bone, &c., in man, produces paralysis on the side where it exists, in the spinal cord, and not at all on the opposite side. The case by Oré, which I related in the preceding lecture is an example of this kind of cases.

---

[*] When I treat of hemi-paraplegia—i. e., of the spinal hemiplegia due to an injury of a lateral half of the spinal cord, below the origin of the nerves of the arms, and producing paralysis in one limb only, I will relate several cases with decisive autopsies.

These facts clearly prove that a lesion in a lateral half of the spinal marrow produces paralysis only in the corresponding side. It is, therefore, evident that I was right to conclude, in my remarks on the cases reported in my first lecture —1st, that the lesion was only in one half of the cord when there was paralysis only in one side of the body; 2nd, that the lesion was in both halves of the spinal nervous centre, but much more in one than in the other, when there was paralysis in both sides of the body, but in a much greater degree in one than in the other; 3rd, that the paralysis or its greatest degree was on the side of the lesion or of its greatest extent transversely in the spinal marrow.

2nd.—*A lesion in one side of the spinal cord produces anæsthesia in the limbs and trunk on the opposite side.*—This proposition implies, of course, that the conductors of sensitive impressions decussate in the spinal nervous centre, so that those coming from the left side, for instance, pass first through that side of the cord, and thence into the right side, in which they go up to the brain. The demonstration that this decussation exists in animals and in man is grounded on several series of facts. I will only speak here of the facts relating to our species, referring those persons who might wish to know the facts furnished by vivisections in animals to my publications on that subject. All I will say about animals is, that it may be that in them the decussation of conductors of sensitive impressions is not complete in the spinal cord. In man, as I will prove, the decussation is complete. I will only give here two series of proofs.

A. There are a great many cases of disease of the base of the brain, leading forcibly to the conclusion that the conductors of sensitive impressions arising from the trunk and limbs decussate before they reach the brain, and consequently in the spinal marrow. I have lately given an account of twenty such cases, and also quoted many others. They show that the views put forward by Sir Ch. Bell, Mr. S. Solly, and by Prof. Longet, who thought that conductors of sensitive impressions decussate in the base of the brain, must be abandoned. In these cases there was a disease in a part of the base of the brain, near the median plane, having destroyed or altered the nervous tissue only or chiefly of the lateral halves of the brain. Some of the cases relate to crura cerebri, others to the pons Varolii, and a third set to the medulla oblongata. In all of the cases in which the disease was limited to a lateral half of one of these three parts, there were paralysis and anæsthesia in the limbs and trunk on the opposite side, and not in the same side.

If we suppose that the decussation of the conductors of sensitive impressions takes place in the upper part of the pons Varolii or between the two crura cerebri, a disease in one of the lateral halves in those parts should certainly produce anæsthesia in both sides of the body, as it would destroy or alter conductors from the side of the disease *before* they cross to the other side, and also those of this last side after they have crossed and reached the diseased side. Now, there are cases in which one of the crura cerebri, or one side of the pons Varolii in its upper part, was altered, and no such thing as anæsthesia on the two sides was observed, the loss of sensibility having been found to exist only in the opposite side.

The same argument may be used for cases of disease in a lateral half of the middle or lower part of the pons, or of the medulla oblongata. The facts relating to these parts are as clear and forcible as those relating to the crura cerebri.

Another argument is as powerful as the preceding: if the decussation of the conductors of sensitive impressions took place above the medulla oblongata, an alteration of a lateral half of that organ would surely produce anæsthesia on the same side. I will give here a short summary of a decisive case which proves clearly that the conductors of sensitive impressions do not decussate above the medulla oblongata.

CASE 15. *Anæsthesia and paralysis of voluntary movements in the left side of the trunk and limbs; tumour in, and softening of, the lower part of the pons and almost the whole of the medulla oblongata, on the right side.*—A woman, after having recovered from a fit of insensibility, found that she had entirely lost the power of motion in her left arm, and in a great degree also in her left leg. Sensibility of the left side was destroyed. The right side of the face was paralysed of motion and sensibility. The right cornea was ulcerated. Paralysis of all the parts affected became complete, after which she died. The autopsy was made twelve hours after death. A fibrous tumour was found on the right side of the pons. It extended from the origin of the trigeminal nerve down two-thirds of the medulla oblongata; and was about two inches long. The surface of the right crus cerebelli and of the pons, on which it pressed, was softened. It was incorporated with the substance of the right side of the medulla oblongata, and had produced a softening which extended through the posterior tract, but became less as it approached the posterior surface. The anterior tract was a pulpy mass. The left side was healthy.

The observer of this case, Dr. S. Annan, justly says,* "The right side of the medulla oblongata was softened to the extent of complete disorganisation. There was complete paralysis of motion and sensation on the left side. The decussation of the fibres of the corpora pyramidalia explains the loss of motion on the opposite side, but as we have no facts proving a similar interlacement of the fibres of the posterior or sensory tract, it is not easy to discover how it happened that the right side was deprived of sensation. Motion and sensation were unimpaired in the extremities of the side diseased. Are we not justified from this in making the inference that there is a decussation of the filaments of sensation as well as those of motion?" The inference is certainly well grounded, but Dr. Annan did not go further, and left undecided the question whether the decussation of conductors of sensitive impressions takes place below the medulla oblongata—i.e., in the spinal cord or in that medulla, with the motor fibres that form the anterior pyramids.

---

* The American Journal of the Medical Sciences. New Series, vol. ii., July 1841, p. 105.

However strange may appear the supposition, that some of the fibres which decussate to form the anterior pyramids are conductors for sensitive impressions, I must discuss the hypothesis here, as we are led forcibly, not only by Dr. Annan's case, but by many cases of disease of the medulla oblongata and the pons Varolii, to admit either this strange view or the opinion I maintain, that the spinal cord is the place of decussation of the conductors of sensitive impressions.

Putting aside all reasons grounded upon our knowledge of the structure and physiology of the medulla oblongata, which might be brought forward against such a supposition, I will mention two sets of positive facts against it.

The first set is furnished to us by vivisections. All physiologists who have made experiments on the anterior pyramids agree in admitting that they are not sensitive, and that they can be divided transversely without any appearance of diminution of sensibility anywhere.

The second set of facts, having been observed in our own species, has much more value. In the first place, there are many cases of disease of, or injury to, one or both of the anterior pyramids or their prolongation through the pons Varolii, in which sensibility was not impaired in the trunk and limbs. I shall relate some of these cases in a lecture on the medulla oblongata, contenting myself now with the mention of the principal features of two cases: one showing that the anterior pyramids may be diseased without anæsthesia; and the other, that the conductors of sensitive impressions are placed behind the prolongation of these pyramids in the pons Varolii.

The first of these cases was published by my friend Prof. Lebert. A patient was attacked with general paralysis, increasing slowly but persistently; he suffered from aphonia, difficulty of speech and deglutition, with increasing dyspnœa; but his senses and general sensibility were unaltered. The autopsy revealed the existence of an aneurismal tumour pressing upon the medulla oblongata. The anterior pyramids, except at their upper part, had been completely destroyed.

The second case was reported by my late friend Dr. Stuart Cooper.—In a patient who had been attacked with anæsthesia in the right limbs, without paralysis, a tumour was found in the left side of the pons, which had not altered the anterior bundles of nerve-fibres (the prolongation of the pyramids).

These two cases complete each other, and leave no doubt that the anterior pyramids are not the channels of sensitive impressions. We can therefore conclude, from the case of Dr. Annan: 1st, that there is no decussation of the conductors of sensitive impressions in the medulla oblongata; 2nd, that these conductors reach that nervous centre having already made their decussation; and, as a necessary consequence from this last conclusion, that the spinal cord is the place were these conductors from one side of the body cross those of the other side.

When I treat of diseases of the base of the brain I will relate other cases of lesion of one side of the medulla oblongata and of the pons Varolii, resembling Dr. Annan's case, and leading to the same conclusions.

Before passing to another subject, I will repeat that many clinical facts positively prove: 1st, that there is no decussation of conductors of sensitive impressions from the trunk and limbs in any part of the base of the brain; 2nd, that these conductors reach the oblong medulla having already made their decussation, so that it is evident that their crossing takes place in the spinal cord.

B. The second kind of proof that the spinal marrow is the seat of the decussation of conductors of sensitive impressions might be considered as useless, owing to the decisive evidence of the first kind of proof, just given, if it were not that this second kind brings with it the demonstration of something more than the fact of a decussation in the spinal nervous centre. The question whether the conductors of sensitive impressions decussate only in certain parts of the spinal marrow, or all along that organ, does not receive the least elucidation from cases of disease of the base of the brain; while it might, on the contrary, be completely solved by cases of disease of, or injury to, the spinal cord. Unfortunately, with only one exception, we have not yet cases in which an autopsy has shown what was the real seat of the lesion when the cervical region of the cord was diseased or wounded; but there are already at least five cases in which a lesion in a lateral half of the spinal cord was found in persons who had had paralysis of voluntary movement on the side of the alteration, and anæsthesia in the opposite side. These cases I will report in a lecture on hemiparaplegia. I will only say now, that they show that the nerve-fibres serving to convey sensitive impressions from the lower limbs and the trunk decussate almost at once after entering the spinal marrow.

Reverting now for a moment to the question above discussed, relating to the anterior pyramids, I will say that these cases of disease of the spinal cord show conclusively that the conductors of sensitive impressions of the trunk and of the lower limbs have no need of a decussation in the medulla oblongata, as they make their crossing in the spinal nervous centre, and, therefore, go up to the base of the brain, those belonging to the left side of the body within the right side of the cord, and those of the right side of the body within the left side of that organ.

These cases prove that a lesion of a lateral half of the cervical region of the spinal marrow must produce anæsthesia in the lower extremity and in the trunk on the opposite side. The case of Oré (Case 14,) shows, besides, that a lesion in one side of that region produces anæsthesia also, in the upper limb of the opposite side.

From the two series of proofs I have given, it results—first, that a lesion of one side of the spinal cord, if extensive enough to produce anæsthesia, will make it appear in the opposite side of the body, and not in the corresponding one; secondly, that a lesion located in both halves of the spinal marrow, much more extensive transversely in one than in the other, will produce anæsthesia in both sides of the body, but in a greater degree in the side opposite to that side of the cord where the lesion is most extensive.

Reading by the light of this conclusion the cases I have reported in the preceding lecture, it will be seen that in Cases 1, 2, 4, 5, 11, 12, and 13, there was a lesion, almost entirely limited to one-half of the spinal cord, in its cervical region. On the contrary, there was a lesion extending to both sides in Cases 3, 6, 7, 8, 9, and 10.

3rd. *A lesion in one side of the spinal cord produces a paralysis of the muscular sense in the corresponding, and not in the opposite, side.*—We are not much advanced yet, as regards the physiological and pathological history of the *muscular sense*. We do know, however, that the conductors serving to give us an accurate notion of the state of contraction of our muscles are absolutely distinct from the conductors which give us the variety of painful sensations we may receive from these contractile organs. We know, also, that in cases in which an autopsy has been made, and the spinal cord found injured or diseased in one of its lateral halves, there was no alteration of the muscular sense in the parts that were not paralysed; and as the paralysis was on the side of the lesion in the spinal marrow, it is clear that the conductors serving to the muscular sense do not decussate in that nervous centre, or, in other words, that they remain, up to the brain, in the same side of the cord to which belong the muscles from which they come.

There is, therefore, a radical difference between the conductors which serve to give the peculiar kinds of sensation that belong to the muscular sense and those nerve-fibres which serve for all other kinds of sensation arising either from muscles or from joints, from the skin, or from other parts of the trunk and limbs. The conductors serving for the muscular sense behave just like the voluntary motor conductors, and seem to follow exactly the same course in the spinal marrow. These two sets of conductors, I repeat, do not decussate in that organ; while, on the contrary, the conductors of impressions of tickling, of touch, of pain, and of temperature, all decussate before reaching the base of the brain.

I can conclude, therefore, that in the cases I have related in which the muscular sense was lost or diminished, in one side of the body (Cases 1, 2, 3, 4, and 7,) there was a lesion in the corresponding side of the spinal cord.

◆

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By **Bernard E. Brodhurst**, F.R.C.S.,

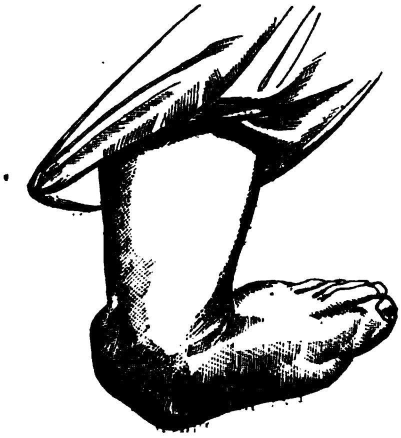
Lecturer on Orthopædic Surgery at the Hospital.

LECTURE IV.

ON CONTRACTIONS OF THE LIMBS.

Talipes valgus occurs very frequently as a non-congenital affection, but somewhat rarely as a congenital deformity. Its external characters are expressed in the name by which it is known, and which signifies that the foot is twisted outwards. The outer margin of the foot is raised, while the inner edge rests on the ground; the foot is flattened, its arches being more or less obliterated, and it is everted. Thus talipes valgus is in some sort the reverse of talipes varus.

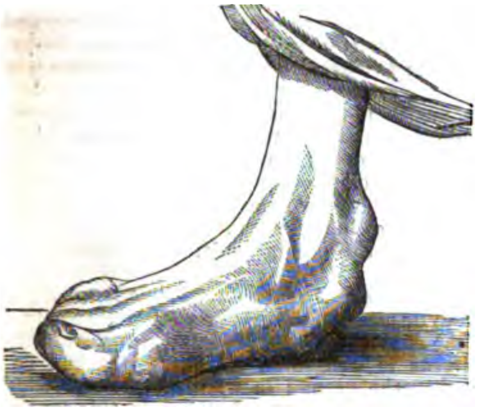
FIG. 9.



The accompanying figure (Fig. 9) represents a severe form of congenital deformity; but even in such a case there is seldom found any deformity of the tarsal bones. Some of the bones deviate from their normal positions—as, for instance, the os calcis, which in such a case is drawn upwards by the violent retraction of the muscles of the calf of the leg; and in proportion as the tuber calcis is raised, so is the astragalus extruded from beneath the tibia. But the foot is also abducted; and therefore there must be a certain amount of rotation of the scaphoid and the cuboid bones, which in severe distortion always exists. This is produced by the action of the peronei. And then the foot becomes flexed upon the leg, and the anterior portion of the foot is raised, as well as everted, through the action of the extensor longus digitorum. Thus there is abduction, rotation, and flexion of the foot; and, in addition, the os calcis is elevated.

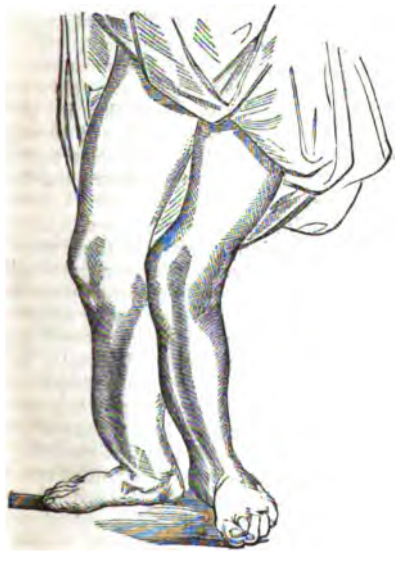
In *non-congenital* as in congenital valgus the longitudinal and transverse arches of the foot are obliterated, so that the sole of the foot rests with its inner margin flat on the ground. At first, however, this flattening is only observed when the weight of the body is borne on the feet, as in standing: on removing the superincumbent weight, the natural arches are, at least in part, restored. At length, however, the elasticity of the structures is lost, and the foot remains flat. This condition is very frequently met with in young and delicate persons with lax fibre. The tarsal ligaments in the sole of the foot yield and become elongated; and, especially under certain conditions, the deformity may increase so much as to produce a convex surface towards the ground—reversing, in fact, the natural arches of the foot. This is especially the case where much standing is required, and thus certain trades are more prone than others to this flattened state of the feet. Fig. 10 is an illustration of a severe form of non-congenital talipes valgus.

FIG. 10.



In the second lecture I had occasion to speak of rachitic valgus. I now show you an illustration of this affection (Fig. 11), and you will observe not only the flattened condition of the feet, but also the crooked leg-bones, and the knees bent inwards.

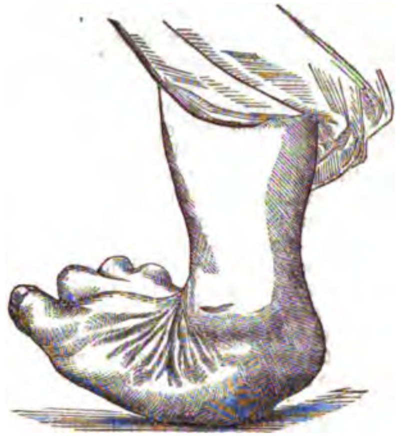
FIG. 11.



Talipes valgus also results from paralysis, the tibial muscles, one or both, having lost power. This occurs especially as a sequel of infantile paralysis.

Spasmodic valgus is comparatively rare. It remains after convulsive action, which may have been excited in childhood through dental or other irritation: just as equinus may remain, or varus, or strabismus, or indeed as any other group of muscles may remain affected. In this class of cases the deformity is for the most part very severe: the arches of the feet are reversed, and the sole is convex towards the ground. The worst form of traumatic valgus that I remember to have witnessed, you also have seen; for it came under my care in the hospital. It was occasioned by extensive ulceration on the dorsum of the foot, and by cicatrisation in healing. The illustration (Fig. 12) shows how completely the arches of the foot were reversed, and how the foot was flexed and everted. The outer margin of the foot also was raised, and the tendo Achillis was tense; so that there was scarcely perceptible motion at the ankle-joint.

FIG. 12.



Valgus, again, results from diseases of the ankle-joint itself. It is not common however, and, when it occurs, the lesser affection is lost in the greater. No one would treat eversion of the foot, when there existed at the same time disease of the ankle-joint; except in so much that it might, and probably would, be necessary to support the foot on account of disease in the articulation. Malposition, consequent upon disease, may however require to be removed: the peronei may remain retracted, and the foot in consequence everted; or there may be, in addition, partial anchylosis of the ankle-joint.

And, lastly, inflammation about the foot and ankle, by inducing softening of the ligaments, or by suppuration and loss of substance, may induce a form of valgus which is obstinate and difficult to treat.

The treatment of congenital talipes valgus varies as the amount of deformity varies. Thus slight cases of valgus are occasionally met with, just as slight cases of inversion of the foot are also sometimes seen, which require no other treatment than simply the application of a bandage, to bring the foot gently into its normal position.

When the tendons are rigid—indeed in all severe cases of congenital valgus, and in all ordinary cases—it is necessary to divide the retracted tendons. Whenever tenotomy is necessary in valgus, the peronei tendons require division. In a somewhat increased grade of distortion the extensor longus digitorum will also require division. The distortion should then be reduced to a condition of equinus; and eversion having been slowly and gently, but entirely overcome, the tendo Achillis, when the gastrocnemius is tense, should be divided. The foot should then be flexed upon the leg until the natural position of the limb is gradually restored. The peronei tendons may be divided at one inch above the external malleolus, and the extensor longus and peroneus tertius as they pass over the tibio-tarsal joint.

The *treatment of non-congenital valgus* varies also according to the degree of deformity and the cause which gave rise to deformity.

A large majority of cases of valgus depends on general and local debility, and in these the form is restored by local support and rest of the limb. The general health always in these cases requires attention; the patients are usually overworked and under-fed or wrongly fed. In many, especially where the affection occurs in the young with lax fibre, a well-made boot, with a spring in the sole, together with attention to diet and limiting exercise, is all the treatment that is necessary. But when the distortion is of long standing, and structural shortening has taken place, it will be necessary to divide the peronei tendons, as well, perhaps, as the tendo Achillis. In paralytic valgus it is seldom necessary to divide tendons, except it be, perhaps, the tendo Achillis. And it is never necessary in rachitic valgus to divide any tendons. In rachitic valgus the tarsal bones undergo some change in form. The treatment in these cases is that which I have already recommended as the treatment of rickets. When rickets is far advanced, and the valgus condition of the foot is considerable—such, for instance, as is shown in Fig. 11,—it is useless to attempt to restore the arch of the foot.

Spasmodic valgus being, as I have already explained, a sequel of convulsive action, it is necessary, after the subsidence of irritation, and when the epileptiform condition, or analogous state has been removed, to divide the retracted tendons and restore the shape of the limb. There is often superadded contraction of other muscles than those of the foot, the upper extremity also frequently being affected, as well as the muscles of the thigh (especially those of the internal and the posterior femoral regions); but in the foot it becomes necessary to divide the extensor longus digitorum, in addition to those other tendons which have been already mentioned.

The mechanical treatment of this, as of every other deformity, should be carried on without force, so that the integument may not be injured. The treatment in many cases is tedious; but force is not necessary: the structures will yield to slow and continued extension.

Allusion has been above made to a compound variety of talipes valgus, which is known as *equino-valgus*. This term is applied where there is somewhat more elevation of the heel, through contraction of the muscles of the calf of the leg, than is found to exist in an ordinary case of valgus. In every other respect the distortion is similar to that which has just been considered. It is unnecessary to make separate mention of the variety, except that, without this explanation, the name might cause confusion.

Talipes calcaneus.—The essential characteristic of talipes calcaneus, whether congenital or non-congenital, is depression of the heel. In congenital calcaneus, the dorsum of the foot is brought more or less into contact with the naterior surface of the leg; and it is retained in this position by retraction of the flexor muscles of the foot. In this respect, therefore, talipes calcaneus is the reverse of talipes equinus.

Congenital calcaneus is the least important of the several varieties of talipes; for the distortion is easily removed by manipulation and bandaging. And should it not have been removed before the child begins to walk, the muscles of the calf of the leg, which extend the foot, rapidly overcome this abnormal action of the flexors. Doubtless, however, cases are occasionally seen in which structural shortening of the flexor muscles has taken place, and where, consequently, operative proceedings are necessary to restore speedily the normal position of the foot. In these rare cases, the tendons of the flexor muscles require to be divided as they pass over the ankle-joint; the foot should then be supported on a well-padded, flexible splint; and, at the expiration of a week, slight, gradual extension, as in the other forms of talipes, is to be made until the normal position of the foot is obtained.

Non-congenital talipes calcaneus is usually of paralytic origin: the heel drops through paralysis of the muscles of the calf of the leg. Here, therefore, as in congenital calcaneus, the heel first touches the ground in walking. The principal changes to be observed, then, in this form of talipes are depression of the os calcis, elevation of the anterior portion of the foot through retraction of the flexor muscles of the foot, and shortening of the plantar fascia; through which the sole becomes deeply arched, and the heel and the ball of the great toe become further approximated. (See Figs. 13 and 14, which show different degrees of the distortion.) In this deformity, especially when it arises from paralysis, the muscles of the calf of the leg undergo wasting and fatty degeneration. And, when the distortion is of long standing, not only are the muscles of the calf of the leg attenuated, but all the muscles of the leg will have passed into a state, more or less, of fatty degeneration.

Treatment.—It is seldom necessary, in the treatment of this affection, to divide the flexor tendons. The plantar fascia, however, generally requires division, and subsequently mechanical treatment will improve the shape of the limb. If, however, these cases are seen soon after distortion has arisen, not only may much deformity be prevented by the adaptation of mechanical means, but it is probable that muscular power may be in part or even wholly restored by means of stimulating applications, warmth, and galvanism. Unfortunately, however, these deformities are often not seen until much time has elapsed, when loss of power is probably to a great extent permanent.

Of *calcaneo-varus* and *calcaneo-valgus* I have to speak much in the same manner as I have already spoken of equino-valgus—namely, that they do not deserve separate mention. In the former, together with depression of the heel, there is also slight inversion of the foot; while in the latter there is depression of the heel and slight eversion of the foot.

The ankle-joint.—It has already been said that valgus may result from disease of the ankle-joint. Flat-foot arising from this cause is not a direct result of disease, however; but it is consequent on the position of the limb. The motions of the ankle-joint are flexion and extension. When the joint becomes inflamed, the foot remains slightly extended upon the leg; or the foot, being supported, is maintained either at a right angle with the leg, or perhaps at an acute angle. Hence there may result, as a consequence of inflammation of the ankle-joint, either equinus or calcaneus or rectangular contraction. The mobility of the joint may be destroyed by true anchylosis, or it may be impaired by false anchylosis; or, again, cicatrices and adhesions may induce muscular retraction and articular rigidity.

And I may mention in this place disease of some of the tarsal bones, especially the astragalus and the os calcis, as not unfrequently occasioning muscular retraction and articular rigidity. The case of Theresa C——, in Wright's ward, is an example in point. In this instance, a portion of the os calcis had become necrosed, and irritation had given rise to retraction of the muscles of the calf of the leg, so that the ankle-joint was held immovably fixed, and the heel was raised fully one inch from the ground. I removed the diseased bone, and the wound soon afterwards healed. The heel remained raised, however; so I divided the tendo Achillis, and at length the motions of the joint were restored perfectly. It so happens that several similar cases have been operated on in the hospital lately.

FIG. 13.

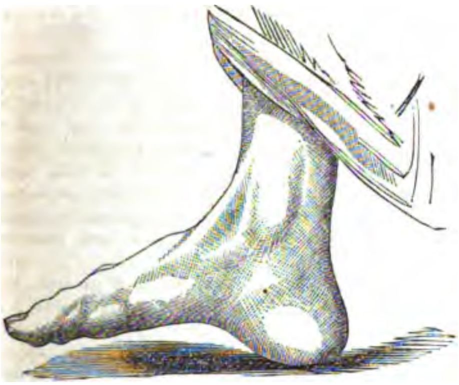
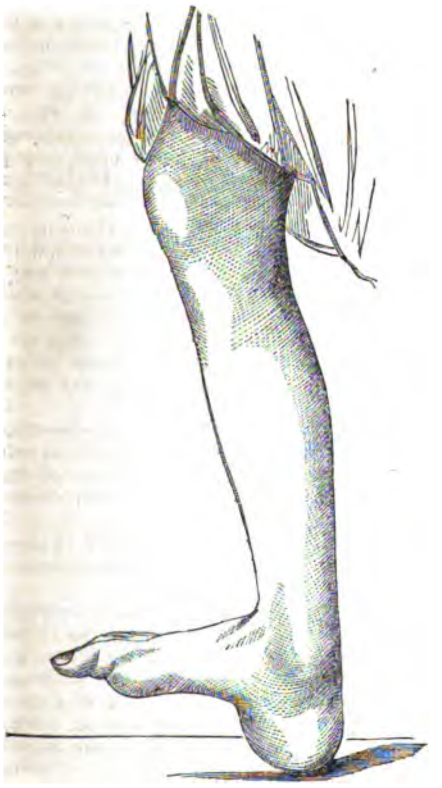


FIG. 14.



The treatment of distortions arising from disease of the ankle-joint involves the treatment of anchylosis; but, to avoid repetition, I will reserve what I have to say on this subject for the present. Where muscular retraction alone exists, giving rise to rigidity of the joint, with or without soft adhesions, it is necessary to divide the tendons of the retracted muscles, and gradually to restore the position of the foot in its relation to the leg by means of Scarpa's shoe or some similar form of instrument. And thus, where the muscles of the calf of the leg are retracted, causing the heel to be raised, the tendo Achillis should be divided; but where the heel is depressed, the flexor muscles, especially the extensor longus digitorum, and perhaps the tibialis anticus and the extensor proprius pollicis, will require to be divided. Where the contraction is rectangular, it may be sufficient alone to divide the Achilles tendon. In all cases, however, of rectangular contraction with false anchylosis, where the adhesions require to be ruptured, it is necessary to divide both the extensor and the flexor tendons, or those which appear to be retracted and are likely to offer themselves as impediments to the free motion of the joint, before the adhesions are ruptured. Mary C——, in Princess's ward, is a good illustration of this operation. She was admitted with false anchylosis of the ankle and knee joints. The rigid tendons around the ankle-joint were divided subcutaneously, and subsequently the adhesions were ruptured, after the administration of chloroform. The knee was operated on later. At this time the patient is in the ward, and if you examine the ankle-joints you will find scarcely an appreciable difference between the two—motion in both is perfect. And if you watch this patient walk down the ward, you will see that she walks without the slightest limp or hesitation. I adduce this case as an example, first, because it was one of more than ordinary severity, there being two joints of a lower limb anchylosed; and also because the patient is at this time in the ward: so that the example may impress you forcibly with the value of this operation.

Original Papers.

ON THE PATHOLOGY AND TREATMENT OF EPILEPSY.

By HERMANN BEIGEL, M.D., M.R.C.P.,

Physician to the Metropolitan Free Hospital.

DURING the last few years I have seen large numbers of cases of epilepsy, 185 of which I have observed and recorded as carefully as is possible with out-patients at an hospital or dispensary. Nearly each new case increased my interest in a disease which has been looked upon with awe from the remotest times, not only from the very remarkable phenomena accompanying the disease, but likewise from the presumed inability of physicians to combat that affection.

The results of my observations differ in many respects from acknowledged propositions of other observers; but to dwell on all these points would require a good deal more space than probably can be accorded me in THE LANCET. I propose, therefore, to allude only to a few such facts as seem to me of special interest.

I must premise that I am speaking of *true idiopathic epilepsy*—a term which has been used vaguely; on the one hand, having been applied to many cases which were not epilepsy; and on the other hand, having been withheld from cases of true epilepsy. I think, therefore, that we should accomplish something that seems very desirable if we succeeded, in the discussion of the subject under consideration, in arriving at an acceptable definition of the disease called *epilepsy*.

If we look over the vast literature of epilepsy, we find the definitions of the writers widely differ; but more recent authors and all writers of the present day concur in one or two points, not such as constitute epilepsy, but the absence of which justifies the conclusion that the case is *not* epilepsy. These points are, *perfect loss of consciousness* and *general or partial convulsions during the attacks*. "This symptom (loss of consciousness)," says Russell Reynolds, "is the characteristic phenomenon of the disease." "We know," says Thomas Laycock, "that in the typical epilepsy this consists in the instantaneous and total abolition of consciousness, upon which abolition convulsions of a particular kind supervene, and the coma upon these. If there be no precedent abolition of consciousness, the convulsions are not strictly epileptic." Not only clinical teachers, but experimentalists, as Kussmaul and Tenner, Schroeder van der Kolk, Brown-Séquard, and others, cling to these two symptoms; and the aim of their experiments was not at all the question whether these are really the essential phenomena of epilepsy, but only how to explain them; moreover, they seem to be convinced that the condition of an animal exhibiting convulsions after cutting off the supply of blood to the brain and medulla, or after dissecting the latter, is identical with the condition of a patient suffering from epilepsy.

Pathological anatomy rendering us very little assistance in the study of epilepsy, clinical facts must of necessity be of more weight than experiments, which, valuable and interesting as they are, cannot pretend to show anything but the well-known fact, that certain lesions of the brain and medulla are likewise liable to produce epileptic phenomena.

Now what do the clinical facts teach us? It is not at all rare to see a patient suffering from epilepsy without having any visible convulsions in the fits. Another patient may have convulsions, but no loss of consciousness; and, what seems perhaps most remarkable, *a patient may be an epileptic, and have fits, and severe fits too, without exhibiting in them visible convulsions or loss of consciousness.*

My statistics on this point stand thus: Of 153 patients of whom I was able to get reliable information, there were

Loss of consciousness and general convulsions in ...	103
Loss of consciousness without convulsions in	30
Loss of consciousness and partial convulsions in ...	6
No loss of consciousness and general convulsions in	4
No loss of consciousness and no convulsions in	7
No loss of consciousness and partial convulsions in...	2
Loss of consciousness and sometimes general, sometimes partial convulsions, in	1
	153

If the facts to be derived from these figures be correct, the question arises, what is *the* phenomenon characteristic and pathognomonic of epilepsy?

Patients who fall down, losing their senses, but lying perfectly quiet, without the slightest convulsive movement, are by no means uncommon. Others tell us that they are over-powered by some remarkable feeling, dragging or throwing them more or less violently to the ground, and state positively that, though unable to speak, yet they are aware of everything around them. Convulsions and loss of consciousness, therefore, cannot be considered as essential symptoms of epilepsy, though present in by far the larger number of cases.

But I have never met with a patient whose friends or relatives had not noticed *the* phenomenon characteristic of epilepsy—namely, abnormal actions of the circulating system. In every case I learned that the patient was either deadly pale or red—that the lips were blue, or the face and whole body dusky. A patient is still under my care who, when sitting at the dinner table, or when playing at chess, suddenly becomes deadly pale, dropping things out of his hands, remaining motionless for a few seconds or a few minutes, being unable to speak, but knowing more or less distinctly what others do and say. These symptoms occur, sometimes once, sometimes several times, during the day; and when they disappear, leave the patient sleepy. Another patient had the same symptoms, but has been several times thrown to the ground.

Now this, I think, is epilepsy in the truest sense of the word, although neither convulsion nor loss of consciousness is present; and I must add that it is a very bad and disagreeable form of epilepsy.

These observations, in connexion with the fact that no abnormal action of the heart can be discovered during the epileptic fits, justify the definition of epilepsy *as a disease the characteristic clinical features of which consist in abnormal contraction or relaxation of the bloodvessels, independent of disease of the heart, recurring at intervals, during which the patient, as a rule, enjoys good health.*

This definition includes partly the "new sense" in which Dr. Hughlings Jackson wishes to see used—or, as he expresses himself, degraded—the term epilepsy. But it differs in the most essential point, since Dr. Jackson wishes to use the term to imply the condition of nervous tissue in sudden and temporary loss of its functions. If we adopt this proposition, then of course Dr. Jackson is right in saying that it must hold some such place as x or y in an algebraical problem.

I am in possession of the history of cases which show the very commencement of the disease, going through a large number of stages, and arriving at that form or degree which has generally been regarded as the representative of epilepsy *par excellence.*

From the definition given, I need scarcely say that I consider epilepsy as a disease of the vaso-motor nerves; which, according to the teachings of physiology, are in a constant state of moderate irritation, the diminution of which produces enlargement of the bloodvessels, while an increase will cause contraction of them.

This view of the nature of epilepsy has already been presumed in respect of many cases of that disease by two well-known continental experimentalists, Drs. Landois and Eulenberg; and my observations are nothing but the clinical evidence for their presumption, applied to epilepsy in general. As in other nervous affections, so in epilepsy, it is by no means necessary for the whole system of the vaso-motor nerves to be implicated in the change which results from some irritant, peripheric or central; but the change may take place in certain branches or districts, or some branches or groups may be more affected than others. This fact gives an explanation of cases like the one recently under my care at the Metropolitan Free Hospital. The patient was a blacksmith, very strong, and apparently healthy. Several times a day he changed color, becoming very pale, and at the same time being unable to articulate; while he felt a peculiar sensation arising in his right thumb, and moving along the arm and neck. The right arm was then convulsed, and the right side of the face distorted. This lasted for about three or four minutes, sometimes only a few seconds; during which the patient retained consciousness, trying to speak, but being unable to utter anything but a few inarticulate sounds. He never had any other fit. Such cases have been called "petit mal," "epilepsia abortiva," &c. But this is as little justifiable as it would be to apply another name to the contraction of one muscle or of a few muscles than is given to the same affection if existing in larger proportions. The same may be said of all inflammatory and many other diseases.

The change produced by the vaso-motor nerves may be limited, indeed, to a very small area—for instance, to the muscular layer of the vessels supplying the retina; so that, in this sense, it is quite justifiable to speak of "epilepsy of the retina" without being exposed to the jocose question put to Dr. Jackson, whether the retinæ are subject to convulsions. A closer study of the disease, from the point of view which I propose, will also throw more light on the phenomenon which is generally called the aura. It is not very long since epilepsy was not considered legitimate, if not preceded by an aura. But if we seek for information on that phenomenon, nearly every author includes other symptoms in the term. I must here state, in opposition to the generally adopted opinion, that the sudden appearance of paroxysms is a rare exception; as a rule, the attacks are preceded by certain changes, indicating altered conditions either in the vaso-motor or in the sensitive nerves, giddiness, loss of speech or sight, undue irritability, alteration of features, numbness or hyperæsthesia, &c. Of these changes the patients are very seldom aware, but the patients' friends notice them.

Of 137 cases in which I have been able to gather information on that point, the result is as follows:—

An aura was present in	14 cases.
Precursory symptoms in	94 "
Sudden commencement of attacks in	29 "
	137 cases.

The term aura ought to be confined to sensations arising at a particular part of the body, and being characterised by their tendency to move towards the nervous centres.—All other sensations, limited to certain parts, or affecting the whole body, have been noted down by me as *premonitory symptoms.* These, as well as the aura, must be considered, as has been done by many authorities, as the commencement of the paroxysm, which, in the majority of cases, I think, would be noticed hours before its perfect development, if the temperature of the patient were measured. Epileptics not being admitted as in-patients to general hospitals, it would be not only an interesting but very important task if gentlemen connected with asylums could find time to extend their researches in this direction—a field of investigation which, so far as I am aware, has not yet been cultivated.

Not being able to touch on many points of interest connected with epilepsy, before I say a few words concerning the treatment of the disease I may be permitted to allude to one point of great importance, namely, the hereditary taint. Of 168 patients, this condition could be traced in a direct line—viz., grandparents, parents, brothers, and sisters, in 61; in an indirect line—viz., first cousins in 6; and in 101 no hereditary transmission was traceable. The interesting point here is, that the hereditary taint sometimes shows itself immediately after birth; in other instances it disposes the individual in such a manner as to give rise to epilepsy or allied diseases, through causes which would be of little or no consequence at all if the inherited disposition were not present, the latter thus remaining latent until something occurs—pregnancy, fright, shock, or injury—which, in an individual of an epileptic parent, produces epilepsy, chorea, or some similar disease. There are still some members of a family under my care at the St. Pancras Dispensary showing this condition in a remarkable manner. The father, forty-nine years of age, has had several fits a day for the last twenty-five years. Of his two sons, the eldest, aged twenty-three, had two fits, the first only seventeen months ago, when he was much excited by attending his father in a fit; the second fit came on in April last. The younger son, seven years old, has been, and is at present again, suffering from chorea. Of the three daughters, the eldest, twenty-four years of age, has been suffering for years from fits, without always falling down; the younger daughter, twenty-two years old, had not been attacked until she was fourteen. At that time her father burnt his arm, and her mother was dressing the wound; the patient was looking on and fell down in a fit, which did not recur. At seventeen, she married, and soon became pregnant, when quickening, she was again attacked, and until delivery the fits occurred about four times. She had had three children, and at each pregnancy she knew that she was quickening merely by the occurrence of a fit, for she never felt any movements of the fœtus. In her non-pregnant state she enjoys excellent health. The youngest daughter, eighteen years, is strong, complaining only now and then of violent headache, which lasts for weeks.

Another interesting case is under my care at the Metropolitan Free Hospital. The patient is a lad of seventeen, a butcher by trade. His grandmother died in a fit, and his sister became insane after a fall when four years old. Patient is very strong, and enjoyed good health until a few days before he came under my care, when he was frightened by seeing his grandfather, who was insane, jumping out of the window; soon afterwards patient was seized by a fit, which recurred several times.

A few days ago only another interesting epileptic family case came under my care at the hospital. The father, forty-five years old, had fits until about ten years ago. Of his four living children two are daughters and two sons. All four were much convulsed when teething. The elder daughter had fits from her fifth year until seventeen, when she became regular and lost her fits. The younger daughter, seventeen years old, has still fits, but is not yet regular. The elder son, twenty years old, is likewise subject to fits, but they only set in on certain occasions; as, for instance, when he is beaten by his father, an occasion which seems to occur rather frequently. He never has a fit without a demonstrable cause.

There are other interesting points connected with epilepsy, as, for instance, the influence of age, sex, &c., on the development and course of epilepsy. But these points, I think, cannot be studied in hospitals, in which the attendance of certain kinds of diseases depends on a combination of artificial, as it were, not natural, causes. The statistics given on such points by different authors have, therefore, no claim to much weight. Of my own cases 82 were men and 100 women. Are we to infer from these figures that epilepsy is more frequent in women than in men? Is the conclusion not equally justifiable that women are much more inclined to seek medical advice in hospitals than men, who do not consider it worth their while to lose at least a half-day's work weekly by attending a hospital, if the attacks occur only once or twice in the course of a year? If mortality be a measure of the prevalence of a disease, the statistics of the United States of America do not bear out the opinion generally adopted of women's greater liability to epilepsy than that of men. During the year ending June, 1860, 501 persons died of epilepsy in the United States. Of these 284 were males and 217 females. I have carefully looked over the most excellent tables, prepared by the Government of Washington, and find the same proportion in all ages, in all provinces, and through all the twelve months of the year. It is, perhaps, not without interest to mention that in the States in which slavery had existed the number of deaths from epilepsy was considerably smaller than where slavery had been abolished.

A few words, in conclusion, with respect to the treatment of epilepsy.

There is, perhaps, no other disease in which the physician can do more good to his patient than in epilepsy. In many cases he is able to effect a *cure*, by which term I mean the patient's not having fits for years. If we see cures of epilepsy every week published in the journals, and see further that some writers fancy the patients to be cured because the fits do not make their appearance for several weeks, then we may rest assured that such an author has other motives in publishing his case than that of advancing science and serving the truth.

In the majority of cases the physician is able to improve the patient's condition, in a great measure, by turning very long fits into slight ones, or by causing the interparoxysmal time to be much longer. Mr. Barry, late house-surgeon of the Metropolitan Free Hospital, has watched a case with me, which was of very great interest in a therapeutical point of view. The patient was a woman aged forty-eight. Six years ago she had been attacked with fits, and had "scores" of them every day—at least twenty in twenty-four hours. During the whole six years she was only once free of them for four days. She must, therefore, have had at least 6000 fits altogether. When I first saw her she had an attack in my consulting room, and I confess it was the most terrible attack I have ever witnessed. She was treated by means of hypodermic injections of morphia, and in the week after the injections she had only one attack. The injections were repeated twice a week, and when the attacks were turned into "faintings," as the patient called them, which recurred about three or four times a week, and did not cause her to fall, she did not return to the hospital any more.

Of the whole number of my patients, 46 remained sufficiently long under treatment to warrant an opinion of the efficacy of the drugs applied. Of the number just mentioned, 14 were cured, 26 have improved, while in 6 the treatment had no effect. A case which I am inclined to look upon as *cured* is the following:—The patient was twenty-one years old, a shoemaker by trade. The grandfather had several fits, but the patient was in good health until three years before he came under my care. At that time he came up from the country, in order to see an execution at Newgate, which made such an impression on him as to bring on epileptic fits after a few hours. In these fits he lost consciousness, and was very much convulsed. For two years he was sometimes free from paroxysms for several months, and then again he had several attacks in the course of a day; six months, however, before he was admitted an out-patient to the hospital, he was seized several times every day. He was likewise treated by means of hypodermic injections of morphia, which were continued for a long time. After having been free from attacks for about twelve months he requested me, in 1865, to discharge him, in order that he might go in search of employment. A few months ago his father came to the hospital, and from him I learnt that his son, who is now in the country following his trade, had never had a fit since he left the hospital.

As to the remedies used by me for the treatment of epilepsy, I have tried nearly all drugs which have been recommended by different authors, including urari or the arrow-poison of the Indians, so strongly recommended by a few continental physicians, which, however, has failed in my hands.

But there are two drugs in which confidence may be placed, viz., bromide of potassium and hypodermic injection of morphia. It is now a well-known fact, that the former when used in very large doses has the power of postponing the paroxysms, and in some instances to make them disappear altogether. Hypodermic injections have the power of producing the same result in a much shorter time. It is very difficult to explain why the action of morphia is different when given internally and when applied hypodermically, but that such is the case has been confirmed by reliable observers.

Finsbury-square, Dec. 1568.

COD-LIVER OIL AS A REMEDIAL AGENT IN TYPHUS.*

By **Robert Gee**, M.D., M.R.C.P.,

Physician to the Liverpool Fever Hospital, Lecturer on Diseases of Children at the Liverpool Royal Infirmary.

In taking a survey of medical science, we are impressed with the difficulty, if not the impossibility, of defining its true progress with anything approaching to accuracy. That great advances have been made within the present century, in regard to the nature and treatment of disease, is undoubted; but it is also true that there is still much uncertainty remaining. Facts have been accumulated and recorded, but they have been variously interpreted. Theories have been advanced, which in their turn have been abandoned. Hence the difficulty of formulating, at any specified time, the exact position of the science.

Let me take, for example, the important subject of inflammation. Various theories have been promulgated with regard to its nature, which it is not necessary for me to allude to as they are familiar to all. But of late it has been generally admitted that inflammation, in its origin, is either ascribable to a perversion of nervous or vascular action, or that, in its essence, it is a modification of nutrition, the result of a morbid change in the relation existing between the textures and the blood. This view, however, has lately been combated by an author of no mean note, who broadly asserts that it a purely chemical disease, that "in its origin it is an exaggeration or excess of the *ordinary* oxidising action that occurs in each part of the body, and that this increased chemical action sets up secondary mechanical derangements which react on the chemical repair of the textures in which the inflammation is set up."

We have been accustomed to regard the changes which take place in an inflamed part as physical or chemico-physical, influenced, nevertheless, in no small degree by a power which has been termed vital force; but in the chemical theory just referred to we are called upon to renounce our old opinions—to deny the existence of vital force, that mysterious power which, intelligently gauged and recognised as unimpaired, has been a source of confidence to the practitioner both in medicine and surgery, in times of difficulty, when otherwise the forebodings would have been dark and gloomy.

Viewing the subject from a chemical standpoint, I am not as yet prepared to deny the existence of this obscure and powerful agency, and to renounce the old-fashioned term "vital force;" neither am I prepared to admit that it is but a correlative of those grand forces the study of whose relation to each other has so deservedly captivated the scientific world. This would be tantamount to acknowledging that, as practitioners, we have only to discover and treat morbid lesions, and that this is to be done without reference to the general condition of the patient. I do not in the least disparage the inquiries of those who have investigated this subject from a purely chemical or chemico-mechanical point of view. Those researches have been ably conducted, and rich and fruitful gleams of light have been thrown upon an obscure page of pathology by their efforts. I must, however, state it as my opinion that their sphere of vision has been too limited; that, while they contemplated their object, and thought they had embraced the whole circumference, they have in reality seen but one portion.

It is stated by the same eminent physician that "excess of chemical action originates some of the most serious diseases to which the body is liable," and that "the first chemical wrong action sets up mechanical derangements which again become the secondary causes of further more or less serious chemical errors." I grant that there is much truth in the theorem, but cannot give my adherence to the statement as representing the whole truth; for we daily witness and experience the influence of a controlling power, call it what you may, repressing or moderating the action of external agencies, which, uncontrolled, would inevitably terminate in disaster.

I pass on by an easy passage from the subject of inflammation to that of fever. The same author holds a similar view—a chemical one—with regard to the essence of fever. He places it in the category of diseases which he designates as diseases of modified peroxidation. The term "zymotic," which was originally applied by Dr. Farr to a certain class of disorders, was probably not intended by him to convey the idea that the essence of those diseases consisted in the setting up of a chemical process—fermentation solely, though the word bears significant relation to chemical action; but Dr. Bence Jones takes advantage of the true meaning of the term, and applies it to illustrate his view that fever is neither more nor less than a chemical process in which oxygen, organic matter, and a specific ferment are the elements involved. The theory is simple and attractive, and also true up to a certain point; but, in my opinion, it does not embrace the whole truth, for the fact that this process is set up in a living entity is entirely ignored. That there is in the system a *vis*, which in some cases moderates this chemical action, and in others entirely prevents it, is a fact which appears to me to be incontrovertible. I may refer to the experience of the attendants at our fever hospitals as proof of the accuracy of the statement. The same oxidiser, the same organism, and the same ferment may be in close proximity for a long period of time without any chemical action taking place: but under the influence of some powerful moral or mental agency or over-fatigue, depressing the vital power, the fever process is originated, and, when once set up, rests not until the whole system is implicated. I see no objection to the term "modified per-oxidation," were it understood that this action is but part of the problem, and that it does not include the "unknown quantity," which forms an important part of the whole.

---

* A paper read at a meeting of the Liverpool Medical Institution.

I will not take up more of your time this evening with a discussion of this important and interesting subject; but I wish it to be understood that, while believing that the human system in health and disease is influenced by the ordinary forces of matter, I nevertheless affirm that there is another force or power which is not a correlative of them—that it is distinct in its nature, and peculiar to living organisms.

I now leave the question of vital force, and shall confine myself to the consideration of the chemical changes which take place in typhus, and the treatment I have adopted as bearing particularly on the changes which are found to occur. I shall not refer to the ordinary symptoms, but to those changes which are appreciated only by the pathologist, and which constitute the essence of the disease. The symptoms may vary, but the changes I refer to are qualitatively invariable. They may be summed up as consisting in the rapid and inordinate metamorphosis and destruction of the tissues of the body without an equivalent or compensating reproduction. As the result of this augmented (oxidising) change, involving chiefly the nitro-genous tissues, a great rise takes place in the temperature of the body, with an enlarged excretion of urea (and probably carbonic acid also, for respiration is decidedly exaggerated) and uric acid. The result of the whole is that the patient is performing an increased amount of work with a semi-paralysed nervous system, his blood contaminated with an inordinate amount of disintegrated tissue, with a diminution of food and impaired assimilative power. The case is different in health, when severe exercise is taken, as in the process of training. In the case of the gymnast or pugilist a great waste of material is going on, but simultaneously therewith increased nutrition takes places, so that the system is invigorated, and not enfeebled as in fever.

The important question presents itself to us—Can the changes observed in fever be arrested, modified, or remedied? If so, by what means?

The great objects aimed at in the treatment of typhus have been the elimination of the morbid poison, the removal of the products of metamorphosed tissue, and, while the chemical changes are in active operation, to sustain vital power and obviate the tendency to death. The first has been attempted (fruitlessly) by several methods, of which venesection, purgatives, and antimonial diaphoretics have been the principal. (I was told by an elderly respectable country practitioner that he had hardly ever failed to cure typhus with antimony. I need not say that I doubted the accuracy of his diagnosis.) It is very doubtful that the morbid poison can be neutralised in and eliminated from the system, and that the progress of the disease can thus be arrested. The removal of the products of peroxidation of tissue from the blood has of late years been the chief aim of treatment. With this view, saline purgatives, diaphoretics, and alkaline salts have been freely administered, and, more recently, the mineral acids. The later mode has in a great measure superseded the saline; it appears to be more rational, and it has had moreover the sanction of the best writers on the subject of fever. The third indication—that of sustaining vital power and obviating the tendency to death—has been fulfilled by the administration of suitable food, and, in the later stages, of vinous stimulants. These have considerably varied in quantity, according to the amount of prostration exhibited, and sometimes, possibly, according to the whim of the practitioner. In addition to the spirituous stimulants, musk, camphor, ammonia, and the ethers have been freely given, and with satisfactory results. I have not referred to the special complications which crop up during the course of fever, and their treatment, as I am referring to the treatment of the disease in its broad and general aspect only.

Having during the last few months prescribed cod-liver oil for my patients in the Fever Hospital, I will now briefly state my reasons for so doing, and the result of this new mode of treatment.

The rationale of the treatment adopted.—As I have already observed, and you must excuse the tautology, there is going on during fever augmented oxidation; a large amount of urea is formed, part of which is excreted and part retained in the blood, (producing uræmia in many cases, which terminate fatally,) and a manifest increase of temperature; but withal there is a loss of mechanical power. This is indicated by the feeble action of the heart and the loss of tonicity in the arteries, and by the condition of the bladder and general muscular system; so that the chemical changes result in the abnormal destruction of tissue without any compensating benefit or effect, the forces in operation being transformed into heat. Taking it for granted that these violent changes were the effect of the morbid poison received into the system, and that the oxidising or fever process, once established, could not be arrested in its course, I was led to think that means, other than those, of doubtful efficacy, supposed or calculated to neutralise and eliminate the poison and its products, might be discovered to accomplish the same end. The most feasible expedient that presented itself was to find an agent which, having an affinity for oxygen, might withdraw its action from the tissues, and afford a pabulum on which it might expend its energy, and thus relieve the system of the great source of danger. It occurred to me that cod-liver oil would effect this object; that, additionally, it would be a source of nutrition, and that there would be a conservation of vital and physical force in consequence. It would thus be the fuel for respiration and animal heat, rather than the living textures, whether Liebig's theory of the hydrocarbons being the normal fuel be correct or not. That a store of fat in the system is a source of power will not be denied; that the animal fats are nutritious, and, as a rule, readily digested, is well known; that it would be directly injurious I had no fear; but that it could be easily administered to a fever patient and digested I was somewhat doubtful. I determined, however, to make the experiment; but there was this difficulty at the outset—it had to be made on human beings, and not on the lower animals or inert matter. The idea had to be tested in a hospital, and not in a dissecting-room or laboratory. I was at first disposed to try the effect of inunction after the manner of the ancients, but relinquished the idea in favor of the internal administration of the oil, partly because of the offensiveness and exhausting nature of the process, but chiefly from the conviction that a sufficient quantity would not thereby be absorbed to fulfil the object I had in view.

The next consideration was the mode in which it should be given so as to be easily digested and assimilated, and at the same time give the minimum of offence to the patient's taste. The form ultimately decided upon was a mixture of the oil in combination with dilute hydrochloric acid, mucilage, tincture of orange-peel, and water. The acid was combined with the view of rendering the oil less disagreeable to the palate and more digestible, and of neutralising the products of metamorphosed tissue; the tincture of orange-peel to assist in covering the taste and smell of the oil, and the mucilage to hold it in a good state of suspension. The mixture is not a disagreeable one. The oil floats when the mixture is at rest; but slight agitation of the bottle causes it to mix readily with the other ingredients. I should add, that the mixture is readily taken, appears to be easily digested, and only in a few very exceptional cases has it given rise to diarrhœa or nausea. The dose is a drachm of the oil, with twelve minims of the acid, administered every two hours; but, in very severe cases, I have frequently ordered it to be given every hour. The diet of the patient is three pints of milk per diem, and a pound of beef converted into beef-tea, well thickened with arrowroot; as I consider it of impotance to combine starchy with the albuminous elements of food.

I now proceed to submit the *results* of the treatment I have had the pleasure of bringing under notice, by recording the notes of the first eleven cases in which it was tried.

1. J. G——, aged sixteen, admitted into the Fever Hospital September 4th, 1868. A porter, temperate, and delicate. Seen on the ninth day of the fever.

Ninth day.—Pulse 104; temperature 104°; eyes heavy and suffused; full exanthematous rash; bowels confined; intelligence perfect; no cough. To have the oil mixture every two hours, and the ordinary fever diet. (To avoid repetition, it will be understood that, unless some change be noted, the patients would have the same diet and medicine up to the period of convalescence.)

Eleventh day.—Pulse 104; temperature 103·6°.

Fifteenth day.—Convalescent.

2. W. S——, aged twenty-one, a moulder; temperate.

Seventh day of the disease.—Pulse 120; temperature 102°; tongue dry; skin dry; full mulberry rash.

Eighth day.—Pulse not noted; temperature 101·2°; tongue moist and clean at the edges.

Ninth day.—Skin moist; rash full; restless night; bowels relaxed. To have ten grains of compound kino powder at bedtime.

Tenth day.—Pulse 92; temperature 99·6°; diarrhœa checked. Repeat powder at bedtime.

Eleventh day.—Pulse 90; temperature 100·9°; slept well; tongue moist; no diarrhœa; skin soft and moist.

Twelfth day.—Temperature 98·8°; skin natural; tongue clean; secretions normal; convalescent.

This patient had subsequently parotitis, which slightly retarded recovery.

3. J. R——, aged twenty-one, an engine-cleaner; pale, temperate.

Sixth day.—Pulse 112; temperature 101·6°; skin hot and dry; tongue dry; rash well-marked.

Seventh day.—Temperature 99·9°; tongue dry; skin dry.

Eighth day.—Pulse 100; temperature 98·6°; tongue dry; skin moist; bowels relaxed. To have ten grains of compound kino powder at bedtime.

Ninth day.—Pulse 100; temperature 99·6°; slept well; tongue dry; diarrhœa checked. Repeat the powder at bedtime.

Tenth day.—Temperature 102·3°; tongue moist at edges.

Eleventh day.—Temperature 97·8°; tongue clean; skin normal; bowels regular; appetite good; convalescent.

The above were well-marked cases; the age, condition, and habits favorable for recovery. The remaining eight were of a much more serious character.

4. C. L——, aged thirty-eight, a joiner; intemperate.

Seventh day.—Pulse 112; temperature 103·1°; respiration 38; tongue dry, brown, and trembling sordes; full deep mulberry rash; bowels confined; tremor of hands; eyes suffused.

Eighth day.—Pulse 96; temperature 101·6°; tongue softer; skin soft; rash full; tremor less.

Ninth day.—Temperature 101·1°; slept well; no tremor; skin dry, but soft; eyes less suffused; tongue coated and brown in centre, moistening at edges.

Tenth day.—Temperature 99·5°; improving.

Eleventh day.—Temperature 99·2°.

Twelfth day.—Temperature 97·2°; tongue clean; appetite improving; convalescent.

This was a severe case, and the improvement was most marked. I hesitated to try the oil treatment in the first instance. He had been admitted two or three days before it was commenced, and stimulants had been ordered, but they were discontinued when the oil was administered.

5. P. F——, aged forty-six. All the family laid up with fever.

Seventh day.—Temperature 97·6°; respiration labored; rhonchi and sibili at base of both lungs; violent delirium at first; skin dry, soft; rash dark, mottled; tongue dry and brown; sordes; conjunctivæ injected; low delirium; extremities cold. Ten ounces of brandy given during the previous twenty-four hours; this to be omitted. Hot-water bottles to be applied to the feet.

Eighth day.—Temperature 95°; skin livid; pulse feeble and intermittent. Brandy, six ounces daily.

Ninth day.—Temperature 96·6°; skin less livid.

Tenth day.—Temperature 96·6°; pulse steady; rash very full.

Eleventh.—Temperature 97·2°; pulse stronger; skin less dusky; tongue cleaner; sordes less; sleeps well; whole condition improved.

Thirteenth day.—Pulse 80; temperature 97·5°; rational; skin normal; appetite returning; convalescent. The vital power was very low on the second day. The brandy resumed with marked benefit.

6. W. R——, aged thirty.

Sixth day.—Pulse 96; temperature 103°; respiration 31; delirium; livid rash; tongue dry; sordes; tremor; restless; slight bronchitis. Wine, four ounces daily.

Seventh day.—Pulse 98; temperature 101·6°; less flushed; less delirium; bowels regular.

Eighth day.—Pulse 92; temperature 101°; tongue moister; more intelligence; skin moist.

Tenth day.—Pulse 80; temperature 101·3°; respiration 25; tongue moist; head clear; sleeps well; appetite returning.

Twelfth day.—Pulse 76; temperature 100·5°; respiration 18; tongue clean; skin normal; convalescent.

7. C. S——, aged twenty-one; coalheaver; intemperate.

Seventh day.—Pulse 102; temperature 103·2°; tongue furred; sordes; eyes heavy.

Eighth day.—Pulse 104; temperature 103°; respiration 24; tongue brown; slept badly; countenance dusky; bowels confined, and slightly tympanitic. To have a draught of castor oil and turpentine.

Tenth day.—Pulse 100; temperature 103·7°; respiration 36, shallow; secretions normal; sleeps better; tongue dry and coated; tympanitis relieved by the draught.

Twelfth day.—Pulse 96; temperature 101·8°; respiration 30; secretions normal; slight moisture on skin; countenance improved; intelligence clear; tongue softer.

Fourteenth day.—Convalescent.

8. C. A——, aged twenty-four, a miller; thin, tall, temperate.

Seventh day.—Pulse 108; temperature 103·3°; respiration 28; no sleep; delirium; rash; tongue brown, thickly furred.

Ninth day.—Pulse 108; temperature 103·2°; respiration 32; faint reddish rash; bowels open; no sleep; delirium acute; epistaxis. To have ten grains of compound ipecacuanha powder at bedtime.

Eleventh day.—Pulse 120; temperature 102·2°; respiration 32; had three epileptic fits; rigidity of the whole frame, with opisthotonos; unconscious; bowels relaxed. To have twenty minims of sedative solution of opium at bedtime; ice-bag to the spine.

Thirteenth day.—Slept well after the night draught; the ice relieved the contractions of the muscles; consciousness partly returned; rash still marked.

Fourteenth day.—Slept well; calm; more conscious. Discontinue night draught.

Eighteenth day.—Had slight pneumonia; symptoms varied slightly from day to day; pulse 96; temperature 98·6°; respiration 28. Convalescent in two or three days.

9.—J. W——, aged twenty-two, a navvy; tall, thin, temperate.

Fifth day.—Pulse 114; temperature 104°; respiration 30; eyes heavy; countenance depressed; rash appearing; tongue furred, slightly moist. Prognosis unfavorable.

Sixth day.—Pulse 104; temperature 102·1°; respiration 28; slight crepitus and increased vocal resonance at base of right lung.

Seventh day.—Pulse 108; temperature 102·6°; respiration 25; countenance heavy and flushed; no sleep.

Ninth day.—Pulse 108; temperature 100·8°; respiration 28; no sleep; bowels relaxed; pulmonary lesion continues. To have ten grains of compound ipecacuanha powder at bedtime.

Eleventh day.—Pulse 116; temperature 102·6°; respiration 24; slept well; bowels regular; tongue soft; sputum slightly rusty.

Thirteenth day.—Pulse 96; rash marked; tongue clean and moist; improving.

After this date the pulmonary symptoms became aggravated, and he had double pneumonia, but eventually recovered. Oil mixture was continued, poultices and blisters were applied to the back part of the chest, and five-grain doses of Dover's powder given every four or six hours.

10. R. G——, aged thirty-seven.

Seventh day.—Pulse 132; temperature 103·2°; respiration 40; no cough; dark mulberry rash; countenance depressed; unconscious; tongue dry and brown.

Eighth day.—Pulse 124; temperature 102°; respiration 45; condition the same.

Ninth day.—Pulse 124; temperature 101·8°; respiration 40; slept well; more conscious.

Eleventh day.—Pulse 114; temperature 101·5°; respiration 43; rhonchi on both sides of chest; no sleep; no sordes; countenance heavy; conjunctivæ injected; oil mixture every hour; cataplasms to the chest. Wine, four ounces daily.

Twelfth day.—Pulse 104; temperature 100·5°; respiration 36; tongue moist at edges; restless at night; dozes in the daytime.

Thirteenth day.—Pulse 100; temperature 99·5°; respiration 32; rash fading; slept well; consciousness returning, and rapid convalescence from this date.

11. P. R——, a tailor; intemperate; fair complexion; whole family laid up with fever.

Ninth day.—Pulse 116; too violent to take the temperature; great tremor; brownish general rash; conjunctivæ injected; bowels confined to tympanitis; scalp shaved; ice to the head; castor oil and turpentine draught; oil mixture to be given every hour; slight restraint.

Tenth day.—Pulse 100; temperature 100·5°; respiration 30; less tremor; more sensible; eyes less fierce; tongue moist; bowels open; slight perspiration.

Eleventh day.—Pulse 90; temperature 100·7°; respiration 26; tongue clean; slept well; more conscious; rash fading, and rapid convalescence.

Such are the rough notes taken at the patients' beside from day to day, while testing the value of the "oil treatment." They were taken for my guidance, and not with the intention of submitting them to the profession. In transcribing them, I observe some omissions in the record, but they are accurate so far as they go. I trust they are sufficiently comprehensive to afford a clear apprehension of the nature of the cases, and to prove that they were typical cases of typhus. There are many points of interest it would be desirable to investigate in connexion with this mode of treatment; mine so far have been probationary and tentative. I may possibly, at some future period, submit fuller details of a large number cases, and enter upon a comparative estimate of this with other methods. Since the date of the last patient's recovery, the "oil treatment" has been adopted in every case admitted into the Fever Hospital, and, on a cursory review of the whole, I am disposed to think with favourable results. I think the recoveries have been above the average, and this was coincident with a reduction of stimulants of fully two-thirds, if not three-fourths. I am not so enthusiastic as to suppose that every case of typhus will recover where this treatment is adopted, for in some cases the dose of the fever-poison appears to be so intense as at once to over-power and prostrate the system, and the patient does not recover from the first shock; in others, advanced age, an enfeebled constitution, or enervating habits, prove a formidable obstacle to recovery; and, in a large series of cases, formidable complications present themselves, which are sufficient to set any mode of treatment at defiance.

The above cases must be taken for what they are worth, as examples of recoveries under the treatment I have been advocating. They were fair samples of the disease, and the proportion of recoveries was satisfactory, when it is considered that eight out of the eleven were not selected cases. I may add, that the rapidity of convalescence was most marked in all.

My recorded materials are too scanty to warrant a summary of results, or a series of inferences or conclusions. They are offered for consideration, and if they have afforded any interest, my object has been fully attained.

A CASE OF LARYNGEAL DISEASE.

INFLAMMATION OF LARYNX. ABSCESSES, PARALYSIS OF VOCAL CORDS; TRACHEOTOMY; RECOVERY: WITH PRACTICAL REMARKS.

By William Marcet, M.D., F.R.S.

Assistant-Physician to the Hospital for Consumption Etc., Brompton;

AND

Wm. Augustus Hillman, F.R.C.S.,

Senior Assistant-Surgeon to the Westminster Hospital.

The case of which the following is the history having occurred under the care of Dr. Marcet and Mr. Hillman consecutively, the medical and the surgical reports have been supplied by each respectfully.

Harriet C——, out patient of the Hospital for Consumption, Brompton, aged twenty, came under my (Dr. Marcet's) care, and on the 7th February of the present year I took the following notes of the case:—

The patient has been suffering from hoarseness and loss of voice for the last four months, after sleeping in a damp bed, and now speaks in a whisper. Slight pain in the left side of the throat. On swallowing, she feels as if there was something swollen there, interfering with the act of breathing. I obtained a good view of the larynx with the laryngoscope. The mucous membrane over the left arytenoid cartilage was very much swollen, occupying about one-third of the diameter of the laryngeal opening. The swelling had the circumscribed and glistening appearance of an abscess. On the right side of the larynx the mucous membrane was red. The vocal cords had not their white glistening normal appearance; they were drawn towards each other, not moving at all freely in the act of respiration.

I prescribed a mixture containing iodide of potassium, a solution of sulphate of iron to be injected into the larynx with Gibb's laryngeal syringe, and tincture of iodine to be applied every other day to the throat.

Six days later she suddenly felt as if something had given way in the throat, and, on coughing, brought up a mixture of matter and blood. The next day her voice returned, although weak; it gradually improved, and on the 28th of February was tolerably strong. I examined her larynx on that day: there was no swelling to be seen; the mucous membrane of the right epiglottidean fold and false cord were red and relaxed; no ulceration.

I again saw the patient on June 5th. Up to the previous fortnight, or for about three months, her breathing had been quite free, and voice good, but with slight hoarseness. Since then, however, respiration had again become difficult; she complained to me of pain in the throat, and air could be heard rushing through the obviously contracted larynx. A laryngoscopic examination showed the left vocal cord to be apparently wanting in substance, probably from its congested condition; the right cord was healthy; the mucous membrane over both arytenoid cartilages was much swollen, with a deep sulcus between them; the vocal cords receded from each other imperfectly. I applied a solution of nitrate of silver to the larynx, and prescribed one of sulphate of zinc to be injected into the larynx with the laryngeal syringe. On auscultation of the chest, all over the left side in front mucous râles were heard; on the right side, at apex, prolonged and bronchial expiration, and some mucous râles lower down. Shade of dulness at right apex, and pain under that spot, on percussion.

On June the 8th, the laryngeal tumour having increased in size, and being obviously an abscess, I made a first, though ineffectual attempt to incise it with Mackenzie's laryngeal scarifier. I again tried on the next day to open the abscess, but the swelling was so soft that it constantly yielded, instead of being cut into, as I pressed the scarifier upon it. I succeeded, however, in my object, as shortly after the patient left me she expectorated a large quantity of matter, and was thereby greatly relieved. On June the 18th, or nine days later, she felt no pain or swelling in the larynx, but the breathing was not quite so free as before. Six days afterwards her voice was much improved, and was indeed tolerably good; but she complained of the difficulty she experienced in the act of breathing. I have no record of the condition of the larynx on that day, but the difficulty of breathing gradually increased, and on the 20th July I observed her vocal cords to be in close approximation, leaving just room enough between them for air to pass; they remained fixed in that position and firmly stretched. The action of the abductor muscles appeared all but ineffectual, while that of the laxors could apparently still be exerted to some extent, as she could speak in a fair tone of voice. There was no inflammation in the larynx to account for this state of the cords. I tried various kinds of treatment, but nothing except the application of galvanism to the cords appeared to give the patient any relief. At the same time her general health began to fail, and she lost flesh rapidly. The temperature of her body on the 27th of July was 99·5° F. under the tongue. On the 28th she complained of bringing up her food, and of pain in the stomach; tongue red. Up to that date I frequently examined the larynx, and could see no improvement; indeed, the space between the cords, available for respiration, was becoming less and less, and her features were expressive of the most painful state of dyspnœa. I then recommended her to apply at the Westminster Hospital, feeling assured that no other means but tracheotomy could save her life. The operation was successfully performed by Mr. Hillman on the 4th of August.

On Oct. 16th I examined the patient's larynx with Mr. Hillman. The left cord is somewhat atrophied or less developed than the right, but exhibits its healthy glistening appearance. With that exception the larynx is quite sound, and the cords are seen moving quite freely in the act of respiration; breathing as easy and free as could be wished. Her health is now good, her appetite excellent, and she has regained flesh and a ruddy color of the face.

This is the third case I have had under my care of dyspnœa from closure of the glottis, owing to spasm of the extensor or loss of power in the abductor muscles of the vocal cords. Although the first two cases improved under medical treatment, I fear no permanently favorable change could be obtained. In such cases I would begin by trying what medicine could do; but should no decided or permanent relief ensue, I should certainly advocate the operation of tracheotomy, with the primary object of giving relief, or averting death from impending suffocation, and next with the view of curing the diseased state of the larynx. It is very remarkable that the mere fact of air no longer passing through the laryngeal passage, and of the lungs being enabled to expand freely, sufficed in the present case to cure the disease.

SURGICAL TREATMENT.

(From Mr. Hillman's notes.)

Miss H. C. C——, having been so advised by Dr. Marcet, presented herself on Aug. 1st, 1868, for admission into the Westminster Hospital under my (Mr. Hillman's) care.

The gravity of the case was at once apparent, and she was kept in a state of perfect quietude, in as uniform a temperature as possible, and carefully watched for a couple of days, when it was evident that medicine had done all in its power, and that the sister art of surgery must be appealed to for its special aid.

Present state.—She now suffers continually from severe dyspnœa, whilst occasional exacerbations of breathing-difficulty threaten immediate suffocation. She presents that marked apprehensive anxiety of countenance familiar to surgeons in cases of physical obstruction to the breathing, other functions remaining as in health, and can speak only in a low whisper. The breathing is accompanied with noisy inspiration and expiration, but not such as denotes croupy obstruction of the air-passages. There is but slight expansion of the chest in inspiration, which is effected only by great effort of all the inspiratory muscles, primary and secondary, the slight expansion that occurs being uniform on the two sides; there are no abnormal bronchial sounds, no crepitation, no undue dulness of the chest, and no expectoration of blood or pus. There is no disease visible on examination of the mouth, fauces, or pharynx. The laryngeal mirror showed the epiglottis to be sound; both of the upper or false vocal cords somewhat thickened (probably the seats of the previous abscesses, one of which was so adroitly punctured by Dr. Marcet); the lower or true vocal cords not apparently changed in structure, but remaining parallel one with the other—probably from paralysis of the abductor muscles, by which they should in health be separated laterally one from the other in inspiration,—and so all but closing the immediate entrance to the lower division of the cavity of the larynx. There are no traces of ulceration of the epiglottis or of the larynx.

Her present state of danger and distress thus appeared to be due—firstly, to the permanently almost closed condition of the chink of the glottis, produced by the approximation of the true vocal cords; secondly, to the thickening of the upper or false vocal cords, produced by inflammatory effusion (these two causes serving to account for the permanently distressful breathing); thirdly, to the occasional occurrence of spasmodic contraction of the laryngeal muscles, accounting for the greatly increased oppression of breathing experienced from time to time.

The indications for surgical relief, therefore, seemed plain—namely, to make and maintain an artificial opening into the air-passages, so that the air might be enabled to pass into and out of the lungs below the several causes of obstruction, and without previously passing through the larynx;—and this for two purposes: firstly, with a view to the immediate preservation of life, by getting rid of the threatening condition of matters by which the air-passages might at any time be completely and fatally closed; secondly, with a view to the patient's ultimate recovery, by placing the diseased and disordered parts for a time, longer or shorter as might prove necessary, in a state of rest, with the hope that they would thus be restored to a condition of health.

Accordingly, on the 4th of August, 1868, I performed the operation of tracheotomy (the patient lying in an easy unconstrained position) by carefully dissecting down to and exposing the anterior surface of the trachea, which being held steadily and drawn somewhat upwards by the use of a sharp hook set in a scalpel-handle, the three upper rings were divided from below upwards in the mesial line; the dilating forceps, which I commonly employ, having been introduced through the wound into the windpipe, so as to make the artificial opening widely patent, the secretions were coughed out, and the tracheotomy-tube was without difficulty passed into the trachea.

The tube used was a double one, of silver—an inner and an outer, closely adapted the one to the other, the inner at its distal or tracheal end projecting beyond the outer,—presenting a circular transverse section, of uniform diameter throughout, well curved, with an oval opening at its greatest convexity, and with the apertures of entrance and exit at right angles one with the other, and of as large a diameter as the windpipe would admit, with a shield in front wide enough to overlap the margins of the external wound: a form of tube which answers admirably when once inserted, though its first introduction is somewhat difficult, especially if the surgeon be not provided with the dilating forceps previously mentioned.

Less than half an ounce of blood was lost during the operation. Chloroform was not employed, as I was desirous to avoid the occurrence of vomiting which now and then results from its use, and which would have caused much discomfort in this case. The patient bore the operation with great calmness, and the relief afforded was so immediate and so great as to cause her to express her comparative comfort in strongly grateful terms. When visited in the evening she was found breathing with ease, the tube admirably allowing the free passage of air to and from the lungs, and causing no irritation or pain.

The subsequent treatment consisted in the maintenance, as far as possible, of a uniform temperature, keeping the tube always clean and free from all obstruction; the allowance of digestible, nutritious food, as much as she liked, with wine; and citrate of iron and quinine as a tonic; with small doses of calomel, as probably likely to facilitate the removal of the thickening of the upper vocal cords.

On the 10th of August, Miss C—— looked much improved in health, with a clear complexion, breathing quite easily at the rate of about 20 in a minute, having a good appetite and cheerful manner, and speaking without difficulty by placing her finger over the orifice of the tube. She improved uninterruptedly until the 1st of October, when the tube, which she had now worn for about eight weeks, being entirely removed, and the wound completely occluded, her breathing through the natural passages proved so satisfactory during some hours that the tube was not replaced.

On the 7th of October, 1868, she left the hospital, with all difficulty in respiration removed, and in satisfactory health—a result to which the patient's own tranquil manner and well-ordered conduct much contributed.

Remarks.—There are some features besides those of diagnosis in the foregoing case which appear worthy of notice in a practical or curative point of view. Diseases of the larynx and trachea constitute a class of cases which are attended with much responsibility on the part of the medical adviser, solicitude on that of the relatives, and no little anxiety and distress to the patient. The operation of tracheotomy is possibly not so frequently had recourse to as it might advantageously be, and the determination in a case of the period at which the operation becomes necessary is oftentimes attended with difficulty; it seems not unfrequently regarded rather as a last resource, to be employed after various supposed remedies have been tried and found to fail, and much invaluable time has been thereby lost. The result is just what happens so often with the operation for strangulated hernia—the operation fails to save life, not from any want of power in itself so to do, but on account of fatal procrastination in its employment; it is put off until it is but too evident that death is at hand, and then it is done perhaps "to give the patient a chance"—and what is the value of such a "chance" when no reasonable grounds of hope remain? The operation fails—life is lost—it is done "to late."

Tracheotomy, when timely and skillfully employed, in suitable cases, is an important means of cure, a potent agent for good, and is not, in my opinion, by any means necessarily attended *per se* with the amount of danger sometimes attributed to it. In the present case, it might have appeared to some that the operation might have been delayed for a day or two, or possibly a week; but even if the patient's life had not been suddenly cut short during such delay, she undoubtedly would have had only a prolonged period of distress; and I cannot doubt, had further delay been permitted, the result would not have been such as is here recorded.

The kind of tube employed is a matter of the utmost importance, many of the tubes supplied by the instrument makers being thoroughly unsuited to the purpose. The tube should be of such a diameter that the patient can breathe through it without any voluntary exertion, being always as large as the windpipe will admit; it should also be long enough to pass some little distance into the windpipe—they are frequently made far too short for the purpose. The oval aperture situated at the greatest convexity of the tube is also very serviceable, as it permits of the passage of air through the natural channels (in so far, at least, as their diseased condition will allow), as well as through the artificial opening, and so enabling the patient to have the advantage of all the breathing-air possible.

Supposing the operation to have been satisfactorily performed, there is, perhaps, no other operation in surgery in the after-treatment of which more assiduous and constant supervision and watching are required from the surgeon and the nurse. The patient should not be left unattended day or night until all danger from blocking-up of the tube has passed. There is a great tendency for the channel of the tube to become obstructed by mucus of the most tenacious character, and so to produce suffocation.

The great advantage of employing a double tube, with the tracheal end of the inner tube projecting beyond that of the outer tube, depends on the facility with which it may be cleansed: the inner tube is merely lifted out from the outer one (the finger closing its opening during its withdrawal), cleansing in boiling water, and replaced; the breathing going on without interruption through the outer tube whilst the inner one is being cleaned.

The maintenance of a warm temperature in the patient's room is another condition necessary to his well-being; because, whilst the breathing is carried on through the artificial opening, the air enters the lungs at once, without being previously warmed, as it is in normal inspiration by having passed through the mouth, nose, and throat. And the unaccustomed coolness of the inspired air, if this precaution be not observed, has a tendency to cause an inflammatory condition of the pulmonary mucous membrane, by which the case is complicated and recovery rendered more doubtful. The inspired air may, in cold weather, be somewhat warmed by placing some soft, porous, woollen covering on the front of the neck over the tube, acting much after the manner of a respirator.

When, after a time, recovery seems to have taken place, some precautions are desirable in the withdrawal of the tube. When it is imagined that the tube may probably be dispensed with, some experimental trials should be made from time to time to ascertain how far the patient can really do without it, as much mischief has sometimes followed its too early removal. The orifice of the tube may be kept closed, during gradually longer and longer periods of time, for a few days; when, if it be evident that the breathing can be performed without the tube, and whilst the wound is completely closed, the tube, having served its purpose, may be finally removed.

ON

THE NUTRITIVE VALUE OF DIFFERENT SORTS OF FOOD.

By Baron Liebig.

It has been said that if man could live on air and water, there would be an end at once of the notions master and servant, sovereign and subject, friend and foe, hatred and affection, virtue and vice, right and wrong, &c., and that our political commonwealth, social and family life, our intercommunication, trade, commerce, and industry, art and science,—in short, all that makes man what he is, would not be if he had not a stomach, and were not subjected to a natural law which obliges him daily to take a certain quantum of nourishment. It is therefore worth while to answer the question why in reality man eats and drinks, and what the substances are which, received in the body during a succession of years, have an influence on the duration of his life.

If eating had no other end but to satisfy appetite, one might perhaps believe that by perseverance the habit could be got rid of. But hunger is the inner admonisher that tell us there is something wanting within the body, and that we must supply the deficiency. That we grow thinner from privation of food, that we are cold and our forces diminish, while on the other hand our weight and bodily powers are kept up, and even increased, by taking nourishment, are facts which everyone can observe in his own person. But what we do not comprehend is, that in spite of this renovation, our body does not remain as it was, but gradually dies away.

What we know of life does not help us to comprehend death, which still remains an inscrutable mystery. The animal body is a warm body, which emits warmth continually, and the heat thus lost must continually be replaced. It is, moreover, like a machine which daily performs a certain amount of work. The heart, or the muscles of the heart, work on uninterruptedly to keep up the circulation of the blood; the muscles of the chest to keep going the respiratory organs; and those of the entrals to maintain the worm-like motion of the organs of digestion. These are daily performances with which our will has nothing to do, while the mastication of our food, the motion of our limbs in walking and running, or otherwise working with them, are all dependent on our volition. The animal body has often been compared to a locomotive, in which, by air, water, and fuel working together, warmth and force are generated. Indeed, air and water are necessary conditions for the generation of heat and strength in the animal body, and food therefore may in a sense be considered as fuel: it has, however, other purposes also.

We all know how rapidly wear and tear ruins an engine; and that to put it in repair materials and work are necessary. The iron or copper which has to be renewed will not be replaced by giving the machine more fuel, and therefore an exterior human power—the power of many workmen—must co-operate and must be consumed, to make up the deficiencies of the machine, and set all right again.

Food does not serve to generate warmth and force only, as is the case with the steam-engine, but also to form and to increase the quickened parts of the animal body, and to reproduce those which are worn out.

If we keep in view these different purposes which food serves, it will be easy for us to form a decided notion of the nutritive value of different sorts of food. Physiology teaches us that all animated and plastic parts of the body arise from the blood, and that the component part of blood, which becomes fluid when heated, and is called albumen, is the material which serves for their construction.

All the different sorts of food of man, as well as that of animals, contain, without exception, substances which are indentical, or nearly identical, with the albumen of blood. This constitutes an entire group of substances found in plants, partly in solution in the juices, partly deposited in the seeds, and which are found in greatest quantity in the cereals. The name given them is albuminate. In the nutritive process, albumen of the blood is formed from them; they are also called constituent nutritive substances, because they furnish the material for the formation of all the plastic parts of the body. From other organic substances they are materially distinguished, having an abundance of nitrogen, and by containing a certain amount of sulphur. The cheesy substance (casein) of milk; syntonin, the principal component part of the muscles; albumen, or that part of vegetable and animal juices which is soluble in heat; gluten of the cereals; vegetable casein in peas, beans, and lentils (legumin), all belong to the group of albuminates.

The component parts of human food and of the fodder of animals which are free of nitrogen, such as fat, starch, sugar, sugar of milk, &c., are applied in the vital process, principally—and in part exclusively—for the generation of warmth. They have been named respiratory substances, or warmth-generating substances. The food of men and animals contains, besides, a third class of nutritive substances, known as nutritive salts. These are the substances which remain in the form of ashes when the articles of food are burned: phosphoric acid, potash, lime, magnesia, iron, common salt, are their chief elements.

The albuminates and heat-giving substances are quite incapable of nourishing and of sustaining life if the nutritive salts are not present, and co-operating with them. Without the nutritive salts they do not give nourishment. The idea of a perfect sort of food must be associated with three conditions; it must contain a certain quantity of albuminates, and there must also be a certain proportion of heat-giving substances, and of nutritive salts. We may accordingly speak of meat, milk, and bread, in which these three conditions are united, as being food; but albuminates, starch, and nutritive salts are in themselves not food; they are only nutritive substances, as indispensably necessary for the vital process as air and water are, but each alone quite incapable of sustaining life.

As food, air, and water are the means by which all occurrences in the organisation of the body, all its multifarious manifestations of vitality, are brought about, it must be clear that the state of the body which we term health depends on the right relation and co-operation of these three requirements.

We easily comprehend the influence of excess in eating and drinking, and in other matters on the health of an individual, because everyone perceives that the capabilities of the organisation and of its parts, as with a machine and its parts, have their limits; and that by the act of overstepping these, which we call excess or debauch, the equilibrium to be preserved in the co-activity of all the different organs will momentarily or lastingly be disturbed. In the animal body there is only a certain amount of force generated daily, which the heart, the organs of digestion and respiration, the limbs, &c., require for, and consume in, their special work. By such excesses the normal state is disturbed, and when such disturbances happen frequently, a change takes place in the condition, and consequently in the capability for work, of one or other of the organs, and the body grows sick.

In order to understand the influence of an irregular expenditure of force, we need only remember that when greatly fatigued we lose our appetite, and that when the stomach is in full activity the limbs are indisposed for performing hard work. Insufficient nourishment and fatiguing work during the period of growth stop the corporeal development of the individual.

Far more difficult is it, even for the attentive observer, to perceive the injurious influence which bad air, or impure water, or an insufficiency of food, exercises on the health of the population, as here the injurious influence is made up of a number of scarcely perceptible disturbing causes. If the air and water teem with such pernicious influences,—if the air abounds in damp, carbonic acid, and organic matter in a state of suspension, —if the water abounds in matters which are in a state of decomposition,—if the nourishment be wholly unfitted for digestion, and for the support of the vital process, then the harmful effect is quick, and we are seldom deceived as to the cause of the disease which has arisen. If, however, the impurities in the air and the water be but trifling, and the nourishment merely deficient in quality, the injurious influence produced from one day to another will scarcely be perceived; but the effect is none the less sure. A state of sickness comes on sooner or later, which is ascribed to a number of chance derangements, but very seldom to the right cause.

From a certain age life is a slow decay, a change in the composition of the substance of the organs, which at last unfits them for their work. The arrival of this period may be hastened or retarded; hastened if the nutrition be deficient, retarded if all the inward parts, as far as this is possible by human care, are kept in a proper condition. In consequence of an imperfect compensation for the force expended, a life may be shortened five, ten, or more years.

The old peasant dies of his brown bread; he is perfectly healthy, he says, and there is nothing the matter with him, except that he is unable to support the bread. The lasting health of the individual depends on the right proportion of the different sorts of food in quantity and quality. This proportion differs in each one, for it is determined more immediately by the condition or the power of work of his inner organs, and also by the daily work to be performed by the limbs.

Individuals whose organs of digestion, secretion, and respiration are weak need food different in quantity and in quality from that of persons in robuster health. For every stage of life a certain mixture of food alone is fitted; and what we all consider as a matter of course for the infant, is, strictly speaking, applicable to every period of life. The evil is that every one has not the free choice of what he will eat; but by learning what is especially suited to his wants, or what is hurtful for him, he may help to lengthen his life a short while. The daily work performed by an individual bears relation to the mass of his muscles, as this depends on his nutrition in relation to his food. Two individuals with muscles unequally developed, cannot perform daily the same amount of work. A badly-fed individual has little muscular formation, and requires less food than one well fed. With the same quantity of food which would keep the badly-fed individual up to his weight, the better-fed man, with greater muscular formation, would lose weight. The English railway contractors measure the capacity for work of their men by their appetite. (Dr. Lankester.)

In consequence of work the muscles diminish; they are used up, and must be renewed daily by means of food, if the power for work is to remain the same. In experiments which Dr. Parkes tried with two perfectly healthy and strong men, he found that, after a walk of fifty-six and a half miles, performed in two days, the men being well fed on substances free from carbon, fat, starch, &c., one lost four pounds in weight, the other one pound and a half, and it took four days for the men, with the aid of abundant meat food, to regain their original weight.

As both men had enjoyed heat-producing food in abundance, and as purposely all victuals were avoided which could possibly have caused the formation of muscle, the loss in weight could only have been produced by the diminution of the musculatory mass in the body. Had the loss of weight been caused by a loss or evaporation of water, the orginal weight would soon have been restored by drinking a few glasses of water; but the slow restoration of the lost weight, and the necessary co-operation of food, show that the formations which in their natural state had retained the escaping water, now no longer existed.

In order that the muscular mass, or, what is the same thing, in order that the working powers of an individual may be kept up, it is absolutely necessary that in his daily food a quantity of albuminate be consumed sufficient to make up for what is lost. A greater amount of work is not to be attained, for a continuation, without a greater amount of food, especially not without a larger amount of albuminate in the nourishment taken. The badly-fed German workman wants in England and America a month's diet abounding in albuminates before he is able to compete with the English or American workman. We may compute, without risking to be far wrong, that a working man of 140 lb. weight, requires for his sufficient nourishment 130 grammes of albuminate (453½ grammes equal 1 lb. English) daily.

The English navvies who were sent out during the Crimean war to make the Balaclava railroad, and who astonished both English and French soldiers by the extraordinary amount of work they performed, consumed daily from 150 to 159 grammes of albuminate. The men in the Munich breweries consume on an average 165 grammes of albuminate per day. The amount of albuminate in the rations of the Bavarian and English soldier in time of peace is about 126 grammes, or 4 oz. in a dry state.

According to the work, it is not at all indifferent in what form the working man enjoys the albuminates in his food; and in this respect the place which meat holds among the food of man has not been sufficiently appreciated by physiologists.

(To be continued.)

◆

ON SOME OF THE FUNCTIONS OF THE MIDDLE AND INTERNAL EAR: AND THEIR ANALOGIES.

By Peter Allen, M.D., F.R.C.S. Edin.

Whilst attention has of late been increasingly bestowed upon the mode of investigating and treating diseases of the ear, and great advance made in aural pathology, there can be little question that our present *physiological* knowledge of the more important parts of the organ of hearing, is neither comprehensive nor accurate. The space allowed me in The Lancet will not admit of even cursory reference to the laborious researches and experiments on physiological acoustics pursued by German and other continental aural surgeons; it must, therefore, be presumed that my readers are somewhat acquainted with the results of their inquiries, as recorded in the several periodicals devoted to their *spécialité*. It is much to be regretted that more unanimity of opinion does not prevail; indeed, it is curious to observe how importantly one writer will modify the ideas of another investigator without himself arriving at more exact or satisfactory inductions.

The somewhat contradictory and, at present, irreconcileable views entertained by both English and German physiologists in reference to the actions of parts within the tympanum and internal ear, seem to have suggested to the late learned President of the Medico-Chirurgical Society (Dr. Alderson) the following observations, which were consequent upon a discussion on the last paper ever presented by Mr. Toynbee, May 8th, 1866:—

"He (the President) thought much more would be gained by the close study of physiology as introductory to pathological investigation. Whilst we were fully acquainted with the mode in which light was impressed upon the retina, and so communicated to the brain, notwithstanding that doubt still existed as to the true theory of the nature of light; yet, on the other hand, whilst the vibrations of the air were fully understood, very little that was positive had been ascertained as to the mode in which those vibrations were communicated to the brain."

Under these circumstances, I have undertaken to endeavor to indicate, with as much perspicuity and brevity as are in my power, some of the more important offices which the various parts in the tympanum perform in transmitting sonorous vibrations to the fluid in the internal ear.

The manner in which the terminal extremities of the auditory nerve spread out upon the delicate membranes of the labyrinth, receive the undulations of sound, and communicate their effects to the sensorium, has lately been elucidated by the minute dissections and microscopical investigations of Kölliker, Schultze, Henle, Czermák, Hulschke, and others, and will be subsequently adverted to. The advance in knowledge of the structure and functions of the labyrinth seems necessarily to lead to the conclusion that the great end and intention of the tympanum (its more immediate accessory part) are to modify, extend, and multiply the various sounds which are conducted through it; whilst by its position, form, communications, and contents, it acts as a protective organ, and renders the internal ear quite independent of the vicissitudes of atmospheric temperature. Incidentally I may remark that this last preservative office is not sufficiently regarded by aural surgeons in their therapeutical treatment. To relieve a catarrhal obstruction in the tympanum, I have frequently witnessed the introduction of *cold* air and lotions into its cavity, through the Eustachian tube catheter, both being, according to my views—in which I am glad to find myself supported by the eminent aurist, Dr. Von Tröltsch,—injurious rather than curative agents. If we put the pathological anatomy of the ear under strict examination, we shall, I think, be soon convinced that the greatest number of cases of deafness arise from disease of the cavity of the drum and its appendages. The hindrances to sound-conduction may be occasioned by simple mucous accumulation, by thickening of the lining mucous membrane (which is also a periosteum, and every inflammation of it therefore constitutes a periostitis) lessening the degree of motion in the chain of ossicles, and giving rise to adhesions between each other, or to the parietes of the tympanum. If these conditions be neglected, further morbid alterations will take place; rigidity of the whole ossicular chain, extending to the membrana tympani externally, and to the fenestra ovalis internally, causing the base of the stapes to become more or less fixed to its articulating surface, may result. This last affection, *anchylosis* of the stapes, which is so likely to supervene upon repeated attacks of aural catarrh, advances insidiously with the patient's age, until no vibrations are able to be transmitted to the vestibule by the ossicular course, and the tympanic air ceases to influence the labyrinthine fluid, in consequence of the necessarily fixed condition of the membrane of the fenestra rotunda. This disease was always formerly, and is frequently now, confounded with affections of the auditory nervous apparatus; and Dr. W. Kramer, at one period of his practice, estimated that his cases of nervous affections exceeded fifty per cent., whereas now, owing to our advance in pathological science, their frequency is reduced to four in a thousand. We cannot, however, yet quite credit such marvellously increasing powers of diagnosis. Nevertheless, we assuredly may diagnose rigidity of the ossicles, or anchylosis of the stapes, by careful attention to the symptoms accompanying their progressive stages, by the history of the case, and by observing the degree of loss which the patient has sustained over, what I term, the *power of adjusting* the ear to receive certain vocal or other sounds. I shall subsequently point out that this power of adjustment results from the mode of attachment, position, and *voluntary* action of the stapedius muscle, affording to my conception a most close analogy to the ciliary muscle of the eye, especially when, as in predaceous birds, that muscle is inserted into osseous plates in the sclerotic, as strong and massive as are the crura of the stapes.

To return to our more immediate subject. An accurate study of the functions normally performed by the tympanum and its contents, will therefore be the only safe guide in determining the exact locality of the diseased alteration. It is not my intention at the present time to enter upon a detailed anatomical or physiological description of the middle and internal divisions of the hearing apparatus. I am now simply desirous of throwing additional light upon certain important points which have hitherto escaped notice, or have not been sufficiently elucidated.

Those, students or otherwise, really interested in the subject, who wish to recall their knowledge of the anatomy and general functions of this complex organ, will find the best *résumé* of the subject in Mr. Wharton Jones's and Dr. Todd's essays in the "Cyclopædia of Anatomy." Although this treatise was published thirty years ago, its general accuracy, as far as knowledge of aural science then extended, cannot be impugned; and perhaps the best testimony to its excellence as an anatomical guide is the re-appearance of most of the engravings and diagrams as illustrations to Professor Owen's last volume on "Comparative Anatomy and Physiology" (article Hearing) just issued from the press.

In reflecting upon the physiology of the tympanum as a whole, and upon the perfection with which all its component parts are arranged for the purposes of receiving, intensifying, and transmitting the aërial vibrations which impinge upon its external membrane, I am surprised to find that no physiological writer seems ever to have entertained the notion that the cavitas tympani contains air that has been *respired.* There is most conclusive evidence to show that in tranquil respiration the tympanum is usually closed against the ingress, through the Eustachian tube, of air respired or unrespired, of gases from the stomach, or even sounds generated in the fauces or mouth; yet, under certain normally-performed muscular actions, the air is permitted to enter and to escape from the interior of the tympanum in such proportions as may be requisite for maintaining the same tension on the inner as on the outer side of the membrana tympani. Without such arrangements for renewal and equalisation of air, the requisite vibratility of the tympanic membrane could not be maintained—the air would become exhausted or absorbed, the membrane and ossicles would fall inwards, causing pressure upon the vestibular fenestra and labyrinth fluid: a condition attended with great diminution of hearing —in fact, all the symptoms usually depending upon an abnormal obstruction of the Eustachian tube would result. Besides the strong presumption that the tympanum, with its mastoid cells, would contain air already heated to an appropriate temperature, and fitted to circulate in and against delicate fragile structures in close proximity to the interior of the cranium, the idea receives confirmation by a personal experiment, which doubtless almost everyone has at one time or another unwittingly performed. This test is best applied out of doors on a cold day, for reasons which will appear obvious. Try to remove an irritant or adhesive mucous secretion from the upper and back part of the palate and fauces by repeated suction of air through the nose, with the mouth closed; you will put into action the levator palati muscle, by which the arch of the palate will become raised to some extent, and the inner wall of the Eustachian tube drawn apart from the outer; and if at the same time an attempt be made to yawn, with the mouth closed or only partially opened (paradoxical as this act may seem), the tensor palati will be also put on the stretch, and the Eustachian tube still more widely opened by its outer wall being drawn apart at every fresh suction of air through the nostrils (the glottis being raised in this inspiratory movement), and cold, very appreciably cold, air will be drawn into the tympanum.

At this point, I cannot refrain from observing that by this experiment, as well as in further explanation of acoustic phenomena, Mr. Toynbee's strongly reiterated opinion, now generally accepted, that the Eustachian tube is *only opened* during an act of deglutition, is proved incorrect.

(To be continued.)

ON THE

TREATMENT OF THE PARALYTIC FORMS OF STRABISMUS.

By Robert B. Carter, F.R.C.S.,

Consulting Surgeon to the Gloucestershire Eye Institution.

The forms of strabismus that depend not only upon contraction of one rectus muscle, but also upon paralysis of its opponent, having been long recognised as sources of much embarrassment to the surgeon. The paralysis is sometimes the primary affection, and sometimes, I believe, it is merely a secondary one, due to the enforced inactivity of a muscle that has been long overpowered by its antagonist. In the former case, the paralysis itself being often traceable to some rheumatic or syphilitic cause of pressure upon the motor nerve, and vision being unaffected, there will usually be much diplopia as well as much disfigurement. In the latter case, where the strabismus was originally caused by hypermetropia, and where vision is much impaired, disfigurement alone will be present. In both, after the lapse of a certain time, we may find the eye almost fixed in an abnormal position: one muscle contracted perhaps structurally shortened, and its antagonist so far paralysed that it will not respond at all to the influence of the will. However successfully we may then address remedies to the removal of the original cause of the paralysis, our success will be fruitless, because the natural balance of power between the opponents is too much disturbed for the weaker muscle to have any chance of reasserting itself; and if we divide the tendon of the contracted muscle, the paralysed one will yet be too feeble to bring back the eyeball to its proper position. Surgical ingenuity has been taxed to devise compound operations, by which the weakened muscle has been brought forward or shortened, and the contracted one divided or put back; but the results have seldom been satisfactory, and the last state of the patient has often been worse than the first. Some two or three years ago, Professor Moritz Benedikt, of Vienna, published on the effects of the direct galvanic current in paralysis of the ocular muscles; and my very rough translation of his paper appeared almost by accident, and without my having any opportunity of revising it, in the second volume of the *Ophthalmic Review*. Benedikt's results seemed to me capable of being improved upon, and I determined in the first suitable case to try a combination of tenotomy with faradisation.

A patient soon afterwards presented herself with complete paralysis of the right surperior rectus. She was a respectable, middle-aged woman, the affection was of many years' standing, and I could not ascertain its cause. The inferior rectus was strongly contracted, the cornea rolled down, the supra-corneal region of the sclerotic bulging forward from the loss of support, the diplopia very distressing, and the deformity extreme. Voluntary power of upward rotation was wholly lost.

In order, in the first place, to test the electric contractility of the paralysed muscle, I obtained a pair of small rheophores, terminating in discs of not more than a line in diameter. These discs were covered with very fine white leather, well wetted. The upper lid being lifted, and completely controlled by a large retractor, governed by the left hand, the discs were applied to the supra-corneal region of the conjunctiva, so far back as possible, with the right hand, and about a line apart. When fairly placed, they were connected with the primary current of a Stöhrer's battery, in very feeble action. At first, the only effect produced was irritation of the fifth nerve, as shown by pain, lachrymation, and redness; but, after three or four applications of the current on successive days, some very slight effort of contraction in the weakened superior rectus became manifest. I then divided the tendon of the inferior rectus; and continued the use of the current daily. Day by day the paralysed muscle recovered strength; and, in about three weeks from the commencement of the treatment, the cure was complete, as well of the diplopia as of the deformity.

The second case that came under my notice was one of hypermetropia, with extreme convergent strabismus of the right eye, the vision of which was so much impaired that there was no diplopia. The patient was a young man of nineteen, a domestic servant; and his squint was a serious hindrance to his prospects in life. Paralysis of the external rectus appeared to be absolute; and the most complete possible tenotomy of the internal rectus, by Liebreich's method, was followed by little if any improvement in the position of the eye. The eyelids were then held apart as widely as possible, and the rheophores used for the former case were applied in the same manner to the conjunctiva covering the external rectus. Little by little, the weakened muscle responded to the current; and after a short period of treatment the squint was entirely removed. The patient was then instructed to exercise the eye daily by reading through a lens of short focal length; and it seems probable that he will ultimately regain useful vision.

I have taken these two cases as types of different forms of paralytic strabismus; and the results obtained in them, and in others of a less marked character, induce me to believe that paralysis of a rectus muscle, due to any of its more frequent causes, is seldom beyond the reach of recovery by electric treatment. But in such paralysis, as indeed in some other forms, the contraction of the opponent is a formidable impediment to the functional restoration of the muscle that is weakened; and the anatomical relations of the recti tendons to the capsule of Tenon are fortunately such that an effectual tenotomy, if carefully performed, will not involve any loss of power likely to produce displacement in an opposite direction It is always satisfactory to obtain some evidence of reaction to the current before the tenotomy is performed, because then eventual success may be considered certain; but there will be some cases in which the paralysed muscle will be too feeble to react until released from the tension of its antagonist.

I am disposed to attach importance to the small rheophores, and to their application on the conjunctival surface, immediately over the affected muscle; so that "localised electrisation" may be practised after the manner of Duchenne. There can be no doubt that an induced or faradic current is more generally applicable than the direct current to the cases under consideration, because less potent in its effects upon the optic nerve and retina; and, as a rule, for the same reason, I should use the primary induced current before having recourse to the secondary. The latter, as the more penetrating, may be used if the former should fail; but on account of the very superficial situation of the recti, only a small power of penetration will usually be required Furthermore, since it has been shown that in some cases paralysed muscles will react to the direct current when they are insensitive to the induced, the former should in all cases be tried, but with due caution, as a last electrical resource, and prior to the performance of any operation for shortening the weakened muscle.

Princes-street, Hanover-Square, Dec. 1868.

A MEDICO-LEGAL CASE OF INJURY TO THE NERVOUS SYSTEM.

By Thomas Buzzard, M.D. Lond.,

Assistant-Physician to the National Hospital for the Paralysed and Epileptic.

Early in February last I was called in consultation by Dr. Slight, of Brewer-street, to a foreign tailor, A. K——, aged fifty, who had been knocked down three weeks previously by a van. He had received some scalp wounds at the back of the head, and bruises about the body, apparently from the horses' hoofs; and was said to have been stunned for a few minutes. I found him in bed, complaining of pain about the left side of the head, and speaking in a peculiarly slow and labored manner. He had a quick pulse, and his head was hot. I was informed that he had been almost constantly drowsy, requiring to be roused before he could reply to questions. He volunteered the information that objects frequently appeared double to him. There was no apparent paralysis of face or limbs. His symptoms appeared referable to concussion.

On April 16th and 18th Dr. Slight brought him to my house. His speech had then greatly improved, and he looked much better in general health. He walked lame, however, leaning heavily upon a stick held in the left hand, and dragging the right leg. The grasp of the right hand appeared very defective. There was no drawing of facial muscles. It seemed that he left his bed a month after the accident; and it was then noticed that his right leg gave way under him, and his right arm was deficient in power. Sensation being tested, we found that he denied feeling compass-points or pinches over the *right* upper and lower extremity. Now, if this were a case of spinal hemiplegia (which the total absence of facial palsy seemed to indicate), there should have been hyperæsthesia of the paralysed limbs, with anæsthesia of the opposite side. This discrepancy, coupled with the fact that the patient was then bringing an action for damages against the owners of the van, threw the gravest doubts upon the genuineness of the symptoms. Before proceeding any further, therefore, I resolved to test, by a carefully-contrived experiment, the truth of his assertion that he had lost sensation in the right limbs; and as the means employed were, so far as I know, novel, I will describe them. The lower extremities being bared, I brought near them Stöhrer's induction machine, with its two wires and sponge directors connected with it. I attached, also, to the *box* (not to the working portion) two other wires and sponges; and I gave one of *these* to the patient, directing him to press the sponge on the outside of his left thigh, and the other to Dr. Slight, requesting him to apply it to the same limb on a given signal. Meanwhile, the patient's whole attention being occupied with these pretended operations on his left thigh (the unaffected one), I applied one of the real sponge directors to the right thigh, and, at the signal, clapped on the other to the same limb; thus directing the most powerful current upon the skin of the paralysed thigh. At the same moment my assistant applied his sponge. Watching the patient's face we failed to discern in it the slightest expression of consciousness that he was receiving a current, the pain of which is wellnigh insupportable. I then reversed the whole apparatus, applying the electric current to the left thigh. Upon this the patient started with a shriek of unmistakable pain, and nearly fell from his seat. The result of this experiment showed conclusively that, to the electric current at least, there was anæsthesia of the right thigh, and removed at once our doubts of the patient's credibility. Further examination confirmed this view. A thermometer left five minutes in each axilla marked 98·1° on the right side, and 97·9° on the left. Careful measurement showed that the right thigh, 6 in. above patella, was ⅜ in. less than the left; and the right leg, 6 in. below patella, was ⅜ in. less than the other. The arms were equal. Electro-motility was good everywhere except in the thumb muscles of the right hand. Asked to raise his right leg, the foot "dropped" as it was lifted from the ground. I should say here that the fingers of the affected hand were quite flaccid.

On June 13th, measurement showed that the right upper extremity had wasted since last examined. The right arm, 6 in. above olecranon, was ¼ in. less than the left; the right forearm, 6 in. above lower end of ulna, ¼ in. less than the other. The disparity between the lower extremities had increased. The right thigh, 6 in. above patella, was now ⅞ in. less than the left; the right leg, 6 in. below patella, ½ in. less than the other. An important change, too, had taken place in the right hand. The middle, ring, and little finger were rigidly contracted upon the palm, and could not, by any exertion of force on my part, be extended. The tondons could be seen and felt projecting and hard in the palm.

On November 20th, the patient walked freely, and there was no dragging of the right leg. The measurement of the thighs and legs was now found to be equal. The wasting of the right upper extremity had increased. The right arm was ⅝ in. less than the left; the right forearm ⅜ in. less than the other. The rigidity of the fingers was still more marked than at the last examination. Sensibility was much improved in the right limbs, but was still apparently defective.

At the end of November the case was tried in court, and the plaintiff recovered damages, the testimony of Dr. Slight and myself being to the effect that the plaintiff was permanently disabled in the right hand. The man had been examined, on the part of the defendants, by two eminent surgeons, who were not called, and no opposition was offered to the medical testimony.

The very careful examination to which this patient was subjected, and his gradual progress to recovery (except in the use of certain fingers), make it evident that he did not pretend his symptoms. The wasting of the limbs and the rigid contraction of the fingers he *could* not simulate. As regards the nature of the nervous lesion, one can only suggest the probability that blood was effused, a part of which became gradually removed by absorption and a part converted into a cyst or hæmatoma, which encroached upon and destroyed a small portion of nerve-substance. Its exact situation, and whether, as is quite possible, there was more than one lesion, are points which necessarily remain doubtful.

Green-street, Grosvenor-square, December, 1868.

ON

MARKINGS OR FURROWS ON THE NAILS AS THE RESULT OF ILLNESS.

By Samuel Wilks, M.D.,

Physician to Guy's Hospital.

The fact that the traces of a past illness may be found on the nails is probably known to many in the profession, as it is one with which I have been well acquainted for many years. Constantly meeting, however, with medical men to whom it is unknown, I take the liberty of bringing the subject before their attention, hoping that the experienced will pardon the intrusion for the sake of those to whom the fact is novel. I cannot at present lay my hands on works of reference, but I believe the subject has been alluded to by English and foreign authors. On taking up the book on "Skin Disease's by the late lamented Dr. Hillier, I find the following casual allusion to it:—"Cross furrows are often seen on the nails. It has been suggested that these are due to an irregular growth of the nail from disturbances of health, the thinner portion being formed when the patient is out of health, and the thicker parts in the intervals." My own distinct knowledge of the fact that the nails become altered in disease was obtained many years ago, when a non-professional gentleman observed the circumstance for himself, and was so much interested in it that he referred the matter to a distinguished natural philosopher. It was after a severe attack of diarrhœa, which caused almost as much prostration as Asiatic cholera, that he discovered a white line or depression at the roots of the nails. Having formed a pretty accurate idea of their rate of growth, he was convinced that the markings corresponded with the date of the illness. I may state that these marks are caused by a slight furrow, which is found more especially on the middle of the nail, and more distinct on that of the thumb. They point, no doubt, to a sudden arrest of the nutritive process during the time of the illness, and herein lies the interest of the observation. In cases of fever we know that the most profound changes take place in all the tissues of the body. In scarlet fever, for instance, the whole of the epithelial surface within and without the body is affected, and, as a result, we may witness a desquamation of the cuticle, falling off of the hair, and separation of the nails. When the fever is at its height, we can have then little doubt of the changes taking place in the tissues, and can feel no surprise that the nails show evidence of the former conflagration. As the patient recovers, and a new cuticle forms, and the hair begins to grow, the nail proceeds to shoot forward afresh, and it is not long before the latter exhibits a transverse furrow, indicative of the previous illness. It is possible, therefore, to ascertain the date of the attack. Physiologists say that the thumb-nail grows its whole length twice in a year; and thus it follows that if the furrow be found in the middle of the nail, the illness occurred three months before. This fact may then serve for a limited period, like "foot-prints on the sands of time," as some additional proof of a previous serious illness. For instance, a patient with cardiac disorder stated that he had had an illness three months before, and on his nails some transverse markings were found; also another suffering from phthisis said that his illness resulted from an inflammation of the lungs occurring a few weeks previously, and on his nails also some distinct lines were discovered. That a severe diarrhœa could produce such a cessation of the nutritive process as to exhibit its effects on the nails is a fact for which I should have been unprepared had it not been apparent to the eyes. It is one, however, of extreme interest. I have never made the subject one of accurate clinical observation; but if I can induce my clinical clerks to record a few cases, the readers of THE LANCET shall be furnished with the result.

CASES ILLUSTRATIVE OF THE NECESSITY OF AN EARLY REMOVAL OF AN EYE-BALL WITH LOST VISION IN CONSEQUENCE OF ACCIDENT.

By ROBERT M'KEAND, Esq.,

Surgeon to the Royal Eye Hospital, Manchester.

To those members of our profession whose attention is more particularly directed to ophthalmic surgery the question of enucleation of the eyeball cannot fail to be a subject of much interest. In all cases requiring this operative proceeding there has been some violent injury, succeeded in general by total loss of vision in the eye, with a tendency to inflammation and disintegration of the structures in the other eyeball.

The principal difficulty lies in giving an opinion as to what period after the accident this operation should be performed. It is now well known that after the eye has sustained such a formidable blow as to lead to its destruction, inflammation of an irritative character is set up in the uninjured eye, which is commonly known by the term "sympathetic inflammation." It is desirable to suggest some systematic plan or rule to determine at what time medical treatment should cease; and, anticipating future trouble, when the injured organ has to all appearance become quiescent we should recommend operative interference. It must frequently have fallen to the lot of the ophthalmic surgeon to be consulted on this subject, and in my own person I have found it a very difficult task to convince the patient of the necessity of resorting to this proceeding, particularly as at what period this destructive mischief may commence the surgeon cannot predict; and the patient, living upon the hope that he may escape the calamity, delays as long as possible the *dernier ressort;* in fact the case is very frequently presented to him when the secondary mischief has already begun. I think it behooves us to point out to our patients the serious consequences which will inevitably result by waiting for such an event, as it is agreed that when once the sympathetic excitement has commenced, medical treatment is of no avail; and unless complete enucleation is at once resorted to, generally speaking a very brief period is sufficient to produce an amount of mischief which is not to be repaired.

An eye slightly dimmed in its vision recovers its integrity frequently enough after the operation of enucleation of its fellow; but, on the other hand, so difficult is it to say to what extent the mischief has proceeded, that in my opinion the most prudent course to adopt is to remove the eyeball as soon after the accident as the patient's health is restored.

Abscission of the eyeball has been considered by some surgeons to be a sufficient check to the progress of sympathetic trouble, and no doubt patient and surgeon have been anxious to accept such a proceeding on account of the great advantage obtained in forming a bed for an artificial eye, which should possess as much mobility as possible. I have frequently, against my better judgment, been induced to make a trial of its efficiency by the anxious persuasions of my patient; and in addition have often tried how far the removal of a large piece of the iris might effect a beneficial purpose; and I must candidly confess that, after many years' experience, I remain firm now, and never consent to adopt any other measure than perfect enucleation in all cases. I cannot recall one successful instance after abscission or iridectomy but the complete removal of the eyeball has always had to follow; and with this result, that by the delay caused by palliation, the other eye has had the opportunity of a more extended period to assist in its decay, which in many of my cases has been most serious. I now, therefore, whether perception of light remains or not, always propose its removal sooner or later.

A certain difference of opinion must necessarily exist amongst operators, according to the variety of cases which occur; but in considering the subject in its entirety, from a somewhat lengthened experience, I express myself as a strong advocate for this operation, and that its earliest date; erring thus, if at all, on the right side.

If the operation be well performed, a large bed of muscles remain, while after all, when an artificial eye is placed on them, has a certain amount of mobility; but the lid, drooping more than it does in cases of abscission, conceals any defect: one eye appears slightly less than the other, but presenting nothing remarkable to the eye of a stranger.

◆

ON PRIMARY EXCISION OF THE ELBOW-JOINT.

By C. F. Maunder,

Surgeon to the London Hospital.

The operation of excision of the elbow-joint for *disease* is a proceeding justified, no doubt, by the experience of every hospital surgeon. No operation of equal magnitude is attended by less fatal consequences, or by such happy results as the above. In almost every instance the surgeon can promise his patient something a great deal superior to a stiff elbow; while the latter condition usually results, after the lapse of a great expenditure of time and prolonged suffering, if the ends of the bones be not removed. So much for excision for *disease*.

I am anxious to show that equally happy results may be insured by excision for *injury*—as in cases of compound comminuted fracture opening the joint. I am the more desirous to do this because quite recently the bone-ends forming the elbow-joint, and *primarily* excised, have been exhibited at the Medical Society of London, and this instance of primary excision was spoken of as a novelty in London hospital practice; amputation of the limb having, as was supposed, been resorted to up to the present time. It has fallen to my lot to perform primary excision of the elbow-joint in seven instances; and most of my colleagues have also performed this operation more than once. At the London Hospital we rarely resort to amputation of the arm for compound comminuted fracture opening the elbow-joint, and then only in cases in which the soft parts as well as the bones are damaged extensively and beyond recovery. In a comparatively healthy subject I should remove large fragments both of the humerus and of the bones of the forearm, rather than submit a patient to the terrible alternative of amputation.

Of the seven cases referred to, two died: of these, in one instance the injury to the elbow was associated with a compound fracture of the skull; and in the second case—the patient being of a most desponding disposition—death resulted from pyæmia. The remaining five cases recovered with useful limbs; flexion and extension, supination and pronation, being secured to all in varying degrees. Some of these cases are recorded in the London Hospital Reports.

New Broad street, Dec. 1868.

◆

ON POISONING BY TINCTURA FERRI PERCHLORIDI.

By. J. W. Wharburton, M.R.C.S.E.

There being, I believe, no case of poisoning by the above tincture on record, and but few by hydrochloric acid taken alone, I am induced to give the notes of a case attended by me on Dec. 5th last.

The patient, Mrs. R. R——, aged thirty, in rather delicate health, had by her an ounce bottle of "steel drops," which she was taking by medical advice. Previous to the occurrence now related the bottle was full, and she had not taken any food for about seven hours. At 4 P.M. on the day named, Mrs. R——, after a quarrel with her husband, in a fit of passion, swallowed the whole contents of the bottle, with a view to commit suicide. She continued well for about a quarter of an hour, when violent convulsions affecting the whole body came on. I arrived a short time afterwards, and found her lying on a sofa: face somewhat flushed, eyes injected, pulse small and accelerated; unable to speak, and apparently unconscious. A little mustard-and-water had been given her without effect. Another spasm soon came on, during which the body was much contorted; the muscles of the extremities contracted violently, and the teeth were clenched and ground together. She required to be restrained upon the couch, and her hold upon those near her could not be unloosed until the spasm suddenly ceased. She then appeared free from pain, but was only partially conscious, and continued unable to speak. After some little difficulty in opening the mouth, I gave her a sulphate-of-zinc emetic, with plenty of warm water. As this did not act, and the spasms recurred, in the next interval I repeated it, this time tickling the fauces with a feather. Copious vomiting ensued, of a clear, reddish-yellow fluid, evidently containing a considerable amount of tincture of iron, with a little mucus. I may here remark that the duration of the attacks was about two minutes, that of the intervals three. After the vomiting, immediate relief was experienced; no more spasms came on, and she rapidly recovered the use of her faculties and limbs. Half an hour after the sickness she had an attack of diarrhœa, with black stools, which soon ceased. At 9.30 P.M. the patient felt quite well, with the exception of some soreness and stiffness of the limbs.

The chemist who supplied the "steel drops" told me it was the Tinc. Ferri Perchloridi, B.P. The symptoms of irritant poisoning in the above case were doubtless caused by the free hydrochloric acid, which is always present, more or less, in tincture of iron.

Holland-place, Edgehill, Dec. 14th, 1868.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

> Nulla autem est alia procerto noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

ST. BARTHOLOMEW'S HOSPITAL.

EXCISION OF THE HEAD OF THE HUMERUS FOR UNREDUCED DISLOCATION—MEDULLARY SARCOMA OF THE THIGH—REMOVAL OF THICKENED AND SUPPURATED BURSA PATELLÆ.

(Under the care of Mr. PAGET.)

WE saw lately some interesting operations performed by Mr. Paget, of which a brief account may be usefully placed on record.

1. A soldier had luxated the head of the right humerus forwards a twelvemonth ago when on board ship. Two months afterwards, at Calcutta, an unsuccessful attempt had been made at reduction; and eight months ago Mr. Willett and Mr. T. Smith both endeavored, but without effect, to reduce the limb. It seemed to them that there was a united fracture as well as dislocation; and it turned out that this was the case. The man had refused, although he was strongly advised, to "put up with" his deformity; and certainly it was hard to bear, for the humerus was quite immovable. He insisted upon something being done; and so Mr. Paget took out the head of the bone. A semilunar incision was made from near the outer end of the clavicle to the tip of the acromion, and this was subsequently extended down the arm for an inch or two. The operation was long and tedious, great difficulty arising from the abnormal position of the humerus, and from the bony connexions, which stretched not only from the head but also from the shaft of the humerus to the glenoid cavity and neck of the scapula. Mr. Paget thought, from the way the elevator slipped into soft bone about the neck, that there must have been fracture at this point extending down the bone. This of course complicated the case very much, a large amount of callus helping to fix the head of the bone very firmly in its unnatural position.

2. A muscular man of fifty got a blow on the middle of the left thigh anteriorly seven months ago; and this was followed, according to his account, by a small swelling, appearing two months ago, and rapidly acquiring the size it now presented of a couple of fists. The anterior muscles of the thigh seemed to be bulged forward by some hardness beneath them, which was diagnosed by Mr. Paget and some other surgeons as a medullary sarcomatous tumour, whilst suppuration, blood coagulum, hydatid, fatty tumour, were suggestions made by some who saw the case. A fine trocar produced a little yellowish-red fluid. Then a scalpel, dividing the muscles, speedily laid bare a tumour, which was quickly enucleated, and proved to be a remarkably characteristic specimen of medullary sarcoma. The cerebriform appearance was curiously distinct. The wound, in which there was necessarily left a certain amount of unhealthy substance (although all was taken away that it was possible to remove), was lightly plugged by lint dipped in perchloride of iron, and left open. Mr. Paget remarked upon the melancholy prognosis in the case. The disease would return in some internal organ probably within one year, almost certainly within two years, and the man would die. It is worth noting that the man presented about the arm and groin a few little nodules supposed to be fatty in their nature.

3. A woman of thirty-five had a great enlarged bursa patellæ of the right knee, which Mr. Paget dissected away. It was as big as a small orange, and when bisected it showed walls thickened to the extent of three-quarters of an inch, crowding in upon the synovial membrane, which could be seen altered by inflammation and covered with lymph and pus. Some of the pus had escaped through the skin by little ulcerated openings resembling very closely the tertiary syphilitic ulceration often seen about the patella. This was just a housemaid's knee, Mr. Paget said, where inflammation had been followed by enormous thickening of the bursal walls, and there was nothing to be done for it save removing it. The wound was left without sutures, in case of oozing.

◆

KING'S COLLEGE HOSPITAL.

CARBOLIC-ACID TREATMENT OF SUPPURATING AND SLOUGHING WOUNDS AND SORES.

(In the practice of Mr. JOHN WOOD.)

THE carbolic-acid treatment has been employed by Mr. Wood in a good number of cases *pari passu* with the more simple forms of water-dressing, and with no dressing at all further than simple cleanliness of the neighboring parts. The carbolic acid has been used in various forms—namely, as a simple aqueous solution; as a solution in oil, as used in the French hospitals; and as mixture with putty, in the manner introduced by Professor Lister. The last-mentioned method has been employed especially in the treatment of compound fractures and of large chronic abscesses, with all the precautions against the admission of air &c. recommended by Lister and Syme. A considerable proportion of cases have been attended with very satisfactory results; some have conformed in every respect with the theory of action promulgated by Prof. Lister; but in a good number of instances, while the antiseptic action has uniformly been effective in utterly destroying putrefaction and fetor, yet in regard to its antipurulent properties such satisfactory results have not been obtained from the putty method. Suppuration has occurred in these cases to a considerable extent, though it is obviously difficult to say whether it would not have been more profuse in the same cases under another plan of treatment.

An observation having an important bearing upon the comparative value of the treatment has been made. When the treatment was first employed, the hygienic condition of the hospital was very good; and cases treated by the carbolic putty method, by simple water-dressing, and by no local application at all, did almost equally well. Many cases of chronic abscess, opened about the same time, and with the same precautions as to limited and valvular openings and the avoidance of rough handling or intermittent pressure, and with the same application of gentle, steady, and continued pressure by bandaging, got well equally rapidly, and with pretty much the same amount of consequent discharge. The same may also be said of the cases of compound fracture, in which the wound was limited and immediately covered up from the air by lint or colodion. Some time afterwards, in the autumnal months, the hospital air became vitiated; and notwithstanding the free use of carbolic acid in the waterclosets and wards, and in the water used for all purposes of ablution and disinfection, many of the cases treated with carbolic acid in exactly the same careful way resulted in free suppuration. One case of amputation of the thigh, followed by bedsore, treated throughout by the carbolic putty method, succumbed at last, after a prolonged illness, from pyæmic pneumonia of the lobular variety. Another case of operation for urethral fistula and phimosis, also attacked by the same disease, was more fortunate. The patient was placed in a separate ward, the floor of which was kept always sprinkled with Macdougal's carbolic powder, a thorough draught of air kept up by means of a fire and open windows, and the sulphite of magnesia administered internally, with wine, brandy, quinine, and good diet. The local treatment throughout was by carbolic oil and putty. The patient, though of a debilitated constitution, and producing well marked and copious rusty-colored and muco-purulent expectoration, made a good recovery. It admits, perhaps, of dispute what proportion of this result was due to the carbolic treatment; but most surgeons would incline to the belief that its local and atmospheric or respiratory application had the largest share in the beneficial agency. A case of lumbar, another of psoas abscess, and a third of chronic abscess of the thigh, occurring about this time, continued to exhibit tolerably profuse suppuration during the carbolic treatment. It was also observed that the neighborhood of the sore was apt to become affected with a dark-red, dusky inflammation, sometimes ending in separation of the cuticle. This was especially apt to follow the use of the carbolic oil, even when diluted to a strength considerably below that used in accordance with the recommendation of Prof. Lister. It occurred also in cases where the carbolic putty was employed with every precaution to prevent its absolute contact with the skin, acting apparently by its vapor upon the surface. After a time, when granulations began to form in a sore, the effect of the carbolic acid or its vapor was decidedly to check, diminish, and even in some cases to destroy the filling-up process, which the removal of the carbolic cause at once and repeatedly altered for the better. In such cases, however, the suppuration was also always held in abeyance; but promptly returned when the carbolic dressings were discontinued. As an injection in gonorrhœa the aqueous solution of carbolic acid has uniformly been found too irritating to the urethra to be long continued, in most cases producing a marked increase in the pain after micturition, and in the inflammatory redness and swelling about the meatus urinarius.

Since the beginning of the year, Mr. Wood has used extensively a double carbolic salt, which was first (he says) manufactured at his suggestion. This salt is the sulpho-carbolate of zinc. It is a definite crystallizable compound, composed of the sulphate of zinc and the carbolate of zinc. Its formula is, according to an analysis made by Professor Bloxam, of King's College: $C^{12} H^5 Zn O^2, 2 SO^3 + Aq$. Its most perfect crystalline form is right rhombic plates, of a flesh color; and its more common form, as supplied by the maker, is in agglomerated amorphous masses of a pinkish-white color. It is very soluble in water, and gives off no smell of carbolic acid whatever, either in the solid form or in solution. This salt, in aqueous solution of from three to six grains to the ounce, Mr. Wood has found of great service in all cases to which the use of carbolic acid is applicable as a dressing for wounds. It appears to combine all the astringent and detergent properties of the sulphate of zinc with the peculiar antiseptic and antipurulent properties of carbolic acid, and possesses the additional advantage of giving off the carbolic acid, in measure and gradually, by a slow decomposition of the salt, under the chemical influence of the discharges. In cases of gonorrhœa, Mr. Wood uses it from the very beginning of the symptoms as a solution of three grains to the ounce, frequently and copiously applied by means of a syringe. As the case advances or proves refractory, the strength of the injection is increased to five grains. The effect upon the purulent nature of the discharge is immediate and marked. At once it diminishes the quantity, and renders more transparent and mucus-like the quality of the flow. In recent cases, treated from the first and properly attended to, it rarely fails to complete the cure in a fortnight or three weeks. In cases which have been neglected previously to the adoption of this treatment, and in chronic cases of gleet, the duration of the treatment has been longer; and in some, accompanied by constitutional cachexia, or interrupted by inflammatory action in the neck of the bladder, it has, while employed, kept in check the discharge, but failed to suppress it entirely. In some the discharge has returned directly upon the remission of the injection, and upon its resumption has again nearly entirely ceased. Orchitis or bladder symptoms have not occurred, in the cases in which it has been employed, in as great a proportion as in those treated by internal remedies or left without active treatment. As an application to herpetic and suppurating soft chancre it is equally effective as an antipurulent agent, and, combined with the administration of iodide of potassium, a speedy healing of the sore has followed. In these cases, and also in those of hard chancre, Mr. Wood has employed the *strong carbolic acid* as an escharotic in the early stages, and approves highly of the results obtained. He has also used the strong undiluted acid with the same purpose as a subcutaneous injection in nævi materni, with unvarying success. Its action in such cases is prompt and efficacious in destroying all the tissues with which it is brought into immediate contact. It is at the same time very manageable, and leaves a dry eschar *without any suppuration*, and which when it falls off like a scab, leaves a cicatrised surface beneath. In efficacy, manageability, cleanliness, and rapidity of results, it is, in these cases, infinitely superior to any other escharotic that has been tried. Mr. Wood has found it efficacious also as an escharotic injection in cancerous nodules of the skin and subcutaneous structures, causing them to shrivel and dry up.

The solution of the sulpho-carbolate of zinc has been extensively used as a dressing to wounds and sores in the practice of Mr. Wood. It removes all odor as promptly as the carbolic lotion, while it is less irritating, more detergent, has no smell, and as effectively prevents all fungoid or sporular formations in moist dressings during hot weather as the carbolic acid itself.

GUY'S HOSPITAL.

TWO CASES OF INJURY TO THE SPINE.

(Under the care of Mr. Birkett.)

We remember seeing a case strongly resembling the first of the two following, which was under Dr. Beale's care in King's College Hospital two or three years ago. A bale of cotton had fallen from a height upon the back of the patient's head and neck. The injury caused paralysis of all four limbs at a remote period, and great narrowing of the cervical canal was found after death.

Case 1. *Partial motor paralysis following a contusion of the neck twenty months before death.*—Henry R——, aged seventeen, was admitted August 19th, 1868. He had always been delicate, and small for his age. Twenty months ago, while stooping with his head directed towards the back of a van, which he was opening, the tail-board fell on the back of his head two inches above the occipital protuberance, rendering him insensible for a minute. He suffered pain in his head, which soon, however, passed off. Just before last Christmas two small abscesses formed in each posterior triangle, which burst, and were some time healing. At Christmas he suffered great pain and stiffness around his neck, and his head seemed twisted towards the left side. Two months ago both arms became suddenly paralysed while asleep. He had previously experienced noises in his head, and thought that he had the nightmare; but upon his brother awaking him he could not move. For one month he had the sensation of "pins and needles" in his arms, and not in his legs. He occasionally felt it since. His legs have gradually become paralysed.

On admission, the patient was placed on his back. Urine and fæces passes naturally. He breathed both with diaphragm and intercostal muscles. General sensation was imperfect, but he could feel in some parts better than others; sensation not very perfect over sternum. He had no power of motion over his arms, but could move his legs a little.

Patient gradually sank, and died five days after admission, without the condition above described being altered.

The following account of the necropsy is from notes taken by Dr. Moxon. On cutting down from the back upon the cervical spines, one or two rough, bare spicules of bone were felt. All the cervical vetebræ were excised. They were more strongly united together than usual, and bent, with the concavity directed towards the left side, the anterior concavity being more strongly marked in the upper two or three vertebræ, so that the spine of the axis (odontoid processs) projected more strongly backward than usual. It was not possible to ascertain whether the transverse ligament had been destroyed or not, for in taking out the vertebræ, the atlas had been cut away from the axis and left behind. On removing the arches, a quantity of tissue was cut into, which, microscopically examined, appeared to be inflammatory material, undergoing in the centre the so-called "strumous deposit"—in fact, degenerating in the centre. The same matter was growing from the dura mater, forming a mass which had reduced the capacity of the canal of the cord fully two-thirds, so that the space just below the odontoid process, through which the cord passed, was narrowed to one-third the natural size, and the cord correspondingly pressed upon. Lungs healthy. No trace of tubercular disease.

In the small omentum were a mass of glands, much enlarged, and filled with "strumous deposit." Nearly all the glands, from those two inches in diameter down to those the size of bean, were degenerated in the centre, and all were undergoing fatty and even calcareous degeneration. Stomach healthy, and bile passed freely into the duodenum. The surface of the liver was covered with white spots, from the size of a pea to a pin's point. They were firm on section, and looked like grey hepatisation in a pyæmic lung.

Case 2. *Injury to spinal cord; concussion.*—A healthy-looking boy, aged thirteen, was admitted into the accident ward May 30th, 1868, at 10.45 p.m. His father gave the following history. At 1.30 p.m., while leaning over a plank, the boy was kicked from behind in the lower part of dorsal region of spine, so that his abdomen was compressed between the foot and the square board, causing him to faint. He soon after walked a short distance, and felt a pins-and-needles sention in his left leg and foot; he also had a great desire to micturate, which he did without difficulty; no blood came with the urine. He suffered then great pain in his back, and felt a grating sensation as if a joint were loose. In about an hour's time his legs became weak, and he was soon unable to stand; then his feet and ankles began suddenly to swell; so much so that, though his feet were small, his father's socks fitted him tightly. At 4 p.m. he vomited some yellowish-green fluid, and first complained of pain over the stomach. He continued to vomit for three-quarters of an hour, and was then put to bed. The pain over the stomach increased, and he wandered frequently. Soon he became totally unable to stand, and hardly able to sit up.

State on admission.—Is unable to stand, and feels uneasy unless lying on his back, is placed on a spring bed. He complains of pain in the abdomen around and below the umbilicus, and a pain in the upper lumbar region; pressure on two of these vertebræ causing pain, which extends round in front towards the navel. The surface of the abdomen is tender, and he has difficulty in flexing the legs, and this he can only do partially—the left less than the right. Both feet and ankles are swollen; but do not pit on pressure. Complains also of stiffness and slight difficulty in swallowing, and pain in the cervical region. His face seems contorted when he swallows his saliva. His throat is healthy; sight dim; has lately voided urine and passed fæces.

May 31st.—12,15 A.M.: His expression is anxious and troubled; increased difficulty in swallowing; stiffness in the cervical region. The pain and stiffness in the face follow the distribution of the auriculo-temporal nerve. The difficulty in swallowing is situated chiefly below the thyroid cartilages. His face while swallowing is distorted, chiefly by the action of the orbicularis oris and the orbiculares palpebrarum. Complains of pain in the stomach, extending down both legs, which jump very much.—11 A.M.: The child seems anxious and worried. His legs jumped very much in the night, and he wandered. He is very restless; skin very hot; tongue dry in centre, brown at the edges; pulse small and quick. Complains still of difficulty in swallowing and stiffness in the jaws, and of pain in the lumbar region, which sometimes shoots up the spine, where he immediately feels a stiffness, and his neck is drawn back. Abdominal tenderness continues; voids urine freely. Ordered three grains of Dover's powder every six hours; and to have milk, eggs, and beef-tea.—9.15 P.M.: Very restless; wandering; skin very hot; pain in the abdomen; jumping of the legs, and stiffness in the back part of the neck.

June 1st.—Can swallow without difficulty. Still lies on his back. His head is drawn sometimes back, sometimes to one side, and he cannot straighten it without assistance. To take twenty minims of tincture of hyoscyamus and one ounce of solution of acetate of ammonia three times a day.

2nd.—Is very feverish, and complains of pain in the chest. Incipient pneumonia.

4th.—Is suffering pain in all his joints; perspires greatly; cannot move his arms for pain. He was seen by the physician, who considered him to be suffering from acute rheumatism. Stiffness of the neck diminished. Pulse 100, small; urine high-colored.

6th.—Skin hot; pulse 100; tongue less furred. Suffers more pain in the legs, which jump more. The pain while swallowing has passed away.

8th.—Less pain.

9th.—Much better; free from pain; pulse 100, stronger.

11th.—Much improved; is up and dressed; feels giddy.

14th.—Discharged well.

HOSPITAL FOR CONSUMPTION, BROMPTON.

RAWNESS OF THE TONGUE AND PAINFUL DEGLUTITION IN ADVANCED PHTHISIS.

DR. DOUGLAS POWELL gives us a note of the treatment which he employs with success in the above distressing complication.

The condition of parts found, he says, is briefly as follows:—The tongue is at first smooth, red, and glistening; if previously furred, the fur clears off in patches, leaving a raw sensitive surface. There is a tendency to fissuring and transverse cracking of the tongue, and apthæ sooner or later appear. The lips are dry; the fauces, soft, palate, and pharynx are either red and dry like the tongue, or may be pale, but with ramiform injection. Aphonia is very commonly present, having either pre-existed for some time or being caused by congestion and dryness of the cords, with apthæ; or, again—and this is, he thinks, a not uncommon cause,—it may arise from the dryness of the larynx, causing the sputa to adhere to the cords, while from the impaired action of the epiglottis, the cough is ineffectual as well as painful. In a very marked case of this late aphonia, which occurred at Brompton, the ventricles of the larynx were found, post-mortem filled with tough mucus, which adhered in streaks to the larynx below. There was no ulceration. Diarrhœa is very commonly present. Any hot or pungent fluid gives much pain, and deglutition is very painful: first, from the mere contact of the food with the hypersensitive raw surfaces; secondly from the compressing action of the palate, glossal and pharyngeal muscles pinching up the inelastic and tender surfaces.

The combination of remedies most beneficial in these cases, which must be familiar to all and require no illustration, consists of chlorate of potash and glycerine in some syrup containing morphia. The proportions Dr. Powell commonly uses are—chlorate of potash, forty to sixty grains; glycerine, half an ounce; syrup to four ounces, with morphia, one grain and a half to two grains. A teaspoonful swallowed slowly acts locally on the parts affected, relieving at the same time the cough. Of course, in the latest stage of the disease this will but render the remaining hours of life more comfortable, or prolong life a little; but there are some cases where the disease of the lungs is considerable, though not incompatible with life, and the patient having been reduced very low by diarrhœa, vomiting, &c., this condition of tongue and throat will come on, and, rendering the taking of nutrients or stimulants almost impossible, the patient therefore dies from exhaustion. Indeed, the apthous condition which follows this is usually considered a fatal sign in chronic disease; but it is not necessarily so. In these cases the above remedy relieves pain, cleanses the tongue, and enables the patient to take nourishment and remedies which greatly prolong life. The following two cases are examples:—

Mary P——, aged thirty nine, was admitted an out-patient under Dr. Powell's care on Feb. 1st, 1868. She had been ill three or four years with cough and partial aphonia. Now complains of cough, expectoration, hoarseness, emaciation, and night-sweats; bowels costive, with flatulence; appetite fair; pulse quick; great anæmia. Physical signs showed a chronic cavity at right apex, with consolidation on the left side.

Feb. 29th.—Night-sweats and dyspeptic symptoms abated under influence of alkaline bitter with cinchona; small doses of iron now given.

April 25th.—Improved. Iron increased and oil given.

May 22nd.—An inhalation for hoarseness, which still continued.

July 18th.—Not so well; more dyspnœa, and aphonia complete.

On the 25th, rawness of the tongue and painful deglutition &c. came on. The syrup of morphia &c. given instead of cough linctus; other medicines continued. The relief was great; the pain in swallowing and soreness of the tongue disappeared, and the voice improved. Finding the throat and voice symptoms always relieved, she has continued to take the syrup as a cough linctus up to the present time, also taking quinine and iron and oil. The voice continues husky; but the general health is considerably improved, and the physical signs have but slightly advanced.

E. P——, aged thirty-two, a native of India, married, was admitted on Sept. 19th, 1868. Has been ill three months; laid up since July with bad cough, especially at night; emaciation. Appetite bad; thirst; pulse very feeble; tongue furred; bowels confined; general debility very great; aphonia. Physical examination showed excavation at the right apex. Iodide of potassium in an alkaline bitter given; daily pill with dinner.

Sept. 25th.—Tongue furred and dry, cracked; throat dry; deglutition painful; bowels still costive. Medicine causes sickness; discontinued, and syrup of morphia &c. given four times a day; dinner pill continued.

Oct. 3rd.—Tongue still much furred, with dryness. Some blue-pill and rhubarb given.

10th.—Patient has improved; voice still much affected, but no pain; tongue improved. The alkaline bitter renewed, but did not agree, and she has continued taking the syrup up to the present time, and has considerably improved on it alone. She is still, however, very weak, and the case is in other respects an unfavorable one.

UNIVERSITY COLLEGE HOSPITAL.

TYPHOID FEVER; PERFORATION OF INTESTINE; LOCAL PERITONITIS; ABSCESS DISCHARGING THROUGH ABDOMINAL WALL; RECOVERY.

(Under the care of Sir WILLIAM JENNER.)

PERFORATION of the bowel, in typhoid fever, is computed to occur in about 13 per cent. of cases of the disease terminating fatally. A patient, who is now in this hospital, has sustained this accident under circumstances which were unusually favorable to him, and of very peculiar character. It is known that occasionally a local peritonitis in connexion with the base of an ulcer may cause adhesion of the bowel to a neighboring coil of intestine, and so a circumscribed abscess may form, discharging itself into the bowel. But in the case to which a brief reference is here made, the inflamed intestine has apparently attached itself to the peritoneal lining of the abdominal wall, and the abscess resulting from perforation, circumscribed by this adhesion, has opened externally through the parieties. We are indebted to Dr. Squarey, the resident medical officer, for some particulars of the case.

The patient, Henry P——, aged thirteen, is a pawn-broker's boy, who was admitted on Nov. 27th, 1868, greatly emaciated, with a small opening just below his navel, discharging greenish-yellow fetid pus. The history showed that this was immediately connected with the intestine, for food passed through it after his admission. It seemed that several weeks previously he had gone through an attack of typhoid fever, and was supposed to have recovered. He was allowed to get up, go about the house, and eat different kinds of food; and, for some reason or other, a powerful dose of a drastic purgative was given to him. Some days afterwards a swelling appeared in the abdomen, which was poulticed, and soon broke "with a report" as was stated, "like a pop-gun." This had been discharging two or three weeks when he was sent to the hospital. A drainage-tube was inserted, and proper measures were adopted for sustaining him. When we saw him. the tube, through which the discharge had been gradually diminishing, had been withdrawn, as no longer necessary, and the site of the opening showed a healthy granulation. There was still some tenderness upon pressing the abdomen, the muscles of which were kept in a somewhat rigid state; but to all intents the boy had recovered from this serious complication. Unhappily, however, his lungs show evident symptoms of advanced tubercular disease, dating, it is probable, from a period antecedent to the attack of typhoid.

The case seems deserving of being placed on record, not only on account of its extremely rare character, but as a useful warning of the evil which may result from too early movement, injudicious feeding, and, worst of all, that reckless torturing of a tender bowel, the administration of a "smart purge" after recovery from typhoid fever.

MIDDLESEX HOSPITAL.

TWO CASES OF ORBITAL TUMOUR, TREATED BY FIRST EXTIRPATING THE DISEASE, AND THEN APPLYING THE CHLORIDE-OF-ZINC PASTE.

(Under the care of Mr. GEORGE LAWSON.)

THE results of operations for the removal of orbital tumours, and especially of those which are of the malignant class, are generally so unfavorable, that it is pleasing to be able to record instances in which the disease has been eradicated, and the patient has continued for a long time free from any recurrence. In a visit to this hospital, we had the opportunity of seeing two patients who had been operated on by Mr. Lawson for orbital tumours, both of which were apparently of a cancerous nature. The first patient was a female in the cancer wards, who was admitted into the hospital as far back as January 30th, 1866. She was then suffering from a scirrhous tumour of the left orbit, and from a small growth of a similar nature on the cheek of the same side of the face. From both localities the disease was excised, and, all hæmorrhage having been arrested by the application of the actual cautery, the chloride-of-zinc paste, spread on small pieces of lint, was laid evenly over the whole of both surfaces. In due time the sloughs separated, and the wound on the cheek soon cicatrised; but in the orbit the whole of the bony walls perished from the action of the caustics, and were detached in one piece. The skin now contracted closely round the gap, and the patient soon became convalescent. As it was impossible to say that the disease would not recur, the woman was allowed to remain in the hospital, where she has continued up to the present time, and without any recurrence of the tumours. As it is now nearly three years since the operation, the committee have rightly considered that the patient is no longer a fit subject for the cancer charity, and she has therefore received orders to leave the hospital in a short time.

The second patient was only admitted into the hospital on December 1st. The account which he gave of himself was that the right eye was removed last June, on account of an intra-ocular growth, but that very shortly afterwards a tumour began to grow from within the orbit. On his admission, the lids were tightly stretched over a firm, nodulated tumour, which occupied the orbit, and bulged considerably beyond it. Mr. Lawson treated this case in a manner similar to the last one. The pain following the operation was very severe; but it was relieved, and sleep obtained, by subcutaneous injections of one-third of a grain of morphia, repeated as often as his sufferings rendered it necessary.

On the fourteenth day after the operation, we saw the sloughs produced by the chloride of zinc lifted away with a pair of forceps from the orbit. As they were removed, they left the bones which they had covered perfectly bare and blanched. No doubt in this as in the first case there will be considerable exfoliation of bone. If any suspicious-looking granulations should spring up, they will be touched freely with the solid chloride of zinc, or with potassa cum calce.

LONDON HOSPITAL.

A CASE OF MERCURIAL TREMOR.

(Under the care of Dr. Ramskill.)

We lately saw an Italian, aged forty-two years, affected with mercurial tremor, to whom Dr. Ramskill had given olive oil with advantage. The man told us that he had silvered mirrors for twenty-one years. He believed that the mercury entered the system by the palms of the hands and under the finger-nails, its vapor also being inhaled. This was his third attack of tremor, the first having occurred seven years ago. During the attacks he would work half time, but latterly he had knocked-off altogether. He had been admitted in July for the present attack. He was then affected with general tremor, the head being involved as well as his limbs, and the arms so much agitated that he could not cut up his dinner. At first he used to shake most at night. He did not suffer any pains in his limbs. His spirits were greatly depressed by the attack. He was treated at first with ten grains of iodide of potassium with one drachm of tincture of hyoscyamus in decoction of bark, three times a day. After two months, half an ounce of olive oil was given three times daily, and the dose gradually increased to one ounce. At the time of our visit the patient had nearly lost his tremor. He told us that he felt dreadfully nervous at times, especially during change of weather. His gums had never been very sore, nor his teeth loose; nor had his bowels been in any way affected. He said there were great differences in the symptoms produced in men exposed to mercurial poison. Some would never have tremor, but would always "feel loaded at the chest;" others would suffer severely from salivation, and lose their teeth. He had tried all sorts of masks and respirators, but they do not act. Moreover a great deal of the mercury, he thought, got in through the skin; and it was impossible to work in gloves.

In the wards of the hospital we saw some other patients who were taking olive oil. They did not object to it: at first it would produce a little nausea, but the stomach soon got used to it. Dr. Ramskill told us that he found it gave color as well as fat, and was useful therefore in anæmia. It should not, he said, ever be given when the temperature of the body is at all high and the pulse quick.

GREAT NORTHERN HOSPITAL.

THERAPEUTICS IN CERTAIN CASES OF UTERINE DISORDER.

(Under the care of Dr. Murray.)

We believe Sir James Simpson was the first who drew attention to the use of an intra-uterine galvanic or zinc and copper pessary in the treatment of amenorrhœa, the result of an imperfect development of the uterus. Lately we have noticed these pessaries being used by Dr. Murray for the cure or relief of an almost opposite condition of matters—namely, subinvolution of the uterus. In this class of cases the uterus may be retroverted or inclined to one side; it is heavy, much larger than natural, and flabby to the touch; the os uteri open, or readily admitting the point of the forefinger; the anterior, posterior, or both lips much thickened or elongated; and at times there is an unpleasant and constant discharge from the interior of the uterus, besides an excess at the periods. These conditions may exist either separately or combined, giving rise to various painful feelings in and about the pelvis. In a case with many of the above-mentioned conditions, where Hodge's pessary had failed to remedy the retroversion and support the uterus, Dr. Murray has met with very gratifying results from the introduction of a straight intra-uterine galvanic pessary. The difficulty of introduction being got over, the uterus was kept in its right direction, and the constant tonic action of the copper and zinc reduced the large flabby uterus, in the course of a fortnight, nearly to its normal and healthy condition.

In the non-specific forms of abrasion, ulceration, or granular inflammation of the os and cervix uteri, the local application lately used by Dr. Murray has been the new preparation of glycerine with tannic acid in the British Pharmacopœia. This preparation, if thoroughly and freely used by means of a large camel-hair pencil twice or thrice during the week, has seldom failed to bring about a healthy condition of the parts. Where there is vaginal leucorrhœa, Dr. Murray passes a roll of cotton wool or lint, some four inches long, well covered with glycerine and tannin, through the speculum (Ferguson's) which, when withdrawn, leaves the plug in contact with the vaginal walls, and after an interval of a few minutes this is removed. This treatment has been also used in cases of irritable vagina with much success.

◆

Clinical Records
OF
THE PARIS HOSPITALS.

ABSTRACTS OF THE INTRODUCTORY LECTURES DELIVERED AT THE VARIOUS MEDICAL AND SURGICAL CLINIQUES OF THE PARIS SCHOOL OF MEDICINE.

HOTEL DIEU.

Prof. Behier, after showing how clinical medicine, according to his idea, should be taught and studied, wished to indicate what part it played in respect of the sciences connected with medicine. Clinical observation could not be complete without the intervention of science; and, therefore, he would advise the students not to follow Trousseau's precept, who used to say "a little less science and a little more art." He could not understand this definition of art and science; and he thought it was the result of a mere confusion. Trousseau's *savants* were a narrow-minded, stationary set; his artists, a lively race, with a stock of ideas either good or bad. Artists, however, could not do without science. There was need to observe nature assiduously, and to study all her movements attentively and closely. Alluding to the different doctrines which are upheld in medicine, the lecturer said that in clinical medicine these questions were of small interest. All clinical teachers, whether vitalists or organicists, acted in a like manner at the patient's bedside. Whatever the general opinions, whatever the school to which one belonged, clinical observation commanded the practitioner at the bedside. The accessory sciences themselves, which were at present so arrogant—and of course no one thought of denying their value,—were the mere tributaries of clinical medicine. When their answers were in accordance with clinical results, it was well and good; but when the converse was the case, then those answers must be considered as wrong and of no value. It was just the same with regard to physiology; and here, notwithstanding the services which this science has rendered to medicine, he would put his hearers on their guard against the tendency which was manifested nowadays to refer everything in medicine to physiological experiment. Clinical experience was the supreme criterion of physiological research; it alone was capable of furnishing to physiology evidence which could not be dispensed with. Everything was brought under the control of physiology. This was carrying things too far. With regard to himself, his pace would be slower, and, like St. Thomas, he would wait until it was said to him: "Vide pedes, vide manus." Even facts were not so very positive; and the *ipse dixit*, though pronounced in Dutch or German, was not always acceptable. Physiological facts, even when positive, did not always agree with clinical experience. As an example of this, the lecturer mentioned alcohol, of which he made great use in the treatment of inflammatory diseases. He had formerly believed that it acted by removing the paralysis of the vaso-motor nerves, and by thus causing decongestion of the organs; but he had given up this view. Some said it acted on the pneumogastric; others on the cerebro-spinal centres. But where was the truth? The same criticism applied to the alleged action of coffee, digitalis, bromide of potassium, &c. Of course he did not mean to attack the experimental method; on the contrary, he believed it involved the progress of medicine. But he condemned the inconsiderate haste and enthusiasm which were manifested. Things did now flow on so smoothly as certain people thought. For his own part he would not fail to note every progress as it presented itself; but he could not resign himself to present facts as accomplished, whatever the authority which covered them, unless they were indisputably demonstrated.

HOPITAL DES CLINIQUES.

Prof. Richet said he did not intend to follow the same method of teaching which he had adopted during the preceding year at La Pitié. There were several methods of clinical teaching. The one which Trousseau followed was brilliant and animated, and for some time it predominated over all the others. Rare cases were chosen, and irregular pathological forms analysed. This mode of teaching was characterised by the originality of the form and the sagacity of the views. But there was the inconvenience of giving too great importance to exceptional cases, and of neglecting the forms of disease which are observed in every-day practice. This method the lecturer had followed at La Pitié, but he would now renounce it. Such a manner of teaching accustomed the mind to seek after exceptional cases, and prepared the way for many errors of diagnosis. There was another method—the opposite one, which consisted in choosing simple cases as the subjects of lectures, and which had been promoted by Rostan, Chomel, Boyer, and Desault. Nélaton occasionally employed it, and Velpeau had definitely adopted it towards the end of his life. Its advantages were indisputable. The patients were studied from the moment of admission into the wards to the time of convalescence; similar cases were compared, and inferences drawn with regard to the natural course of the disease, its possible complications, its duration, and the comparative value of different modes of treatment. This teaching should be mostly conducted at the patient's bedside. The lecturer said he would barely refer to a third plan, which consisted in giving pathological, and not clinical, lectures. Thus, in connexion with any single case, an exhaustive lecture was delivered on the subject of the respective disease. He would choose an intermediate course, partaking of the first two methods. Like Trousseau and Dupuytren, he would lecture on difficult and rare cases; but generally he would follow Chomel and Boyer's wise and prudent practice.

LA CHARITE.

Prof. See referred to the various causes which had conduced to the sterility of clinical medicine. Grounded on observation, on morbid anatomy, and on the study of therapeutical indications, each of these departments had been badly investigated. The description of cases had become a long, sterile, and fastidious enumeration of symptoms, and the signification and relative value of the respective phenomena had not been studied. For instance, it had been remarked that in nine out of ten cases of typhoid fever there existed meteorism, and therefore meteorism had been taken as a characteristic sign of typhoid. Yet this symptom was present in other diseases, whilst it was sometimes absent in cases of well-marked dothinenteric fever; and it merely indicated a paralysed condition of the intestines, or a fatty or waxy degeneration of the abdominal muscles. These phenomena should be explained physiologically, and in doing this the observer should be free from all preconceived ideas and not follow any predetermined direction. The intervention of physiology in the study of morbid appearances was not less necessary. Bayle and Laennec had not foreseen the full value of their discovery. They thought it was merely a means of distinguishing morbid tissues—of classifying lesions. Morbid anatomy had also served to determine the form, the volume, and the situation of morbid products, and thus elucidate the diagnosis. But it had not been expected that it would be utilised in regard to the treatment. In this respect the microscope had not yet furnished any improvement, and had even been injurious to the advance of clinical medicine. In attempting to take the cellule as a means of diagnosis destined to overthrow clinical observation, the science of histology had materially impeded the progress of clinical medicine. Nowadays it had been recognised that elementary normal forms underwent changes in regard to time or situation; but, after all, they were mere deviations from the normal type. They were not, therefore, noxious foreign beings, which invaded and destroyed the body; but their formation was under the dependence of physiological laws, which presided over the development of symptoms. Disease was therefore nothing else than a mere deviation from the normal type, both in regard to its anatomical elements and to its functional disorders. The sick man had neither new organs nor new functions. Only there were new conditions created by the causes of the disease. Physiology presided over the whole scene. The disorder being functional, it was physiological actions and means which must be employed to check them; and our idea of disease became much less alarming since we were brought to believe that the lesion was often not more fatal than the symptoms. This view led to a more definite determination of disease. If the histological lesion ceased to be a parasite, a sort of outlaw in the order of biology, its phases might be often followed, and its mechanism detected by the experimental method. Thus morbid anatomy would be vivified, and cease to be a *caput mortuum*. But it was particularly with respect to therapeutics that clinical medicine had been backward since the beginning of the century. Medical men were now empiricists or statisticians, and they pretended to be free from the influence of former doctrines; but unfortunately this was a mistake. The various doctrines which had successively reigned in medicine had left deep and pernicious traces. After having divided these doctrines into three grand classes—the solidist, the humoral, and the vitalist,—and after having shown in what way they acted injuriously upon medical practice, and how they had led to great uncertainty and confusion, M. Sée proceeded to say that the modern tendencies of rational empiricism and specialism were not worth much more. To each specific disease a specific remedy was offered; and when no specific remedy existed, expectoration was resorted to. But specifics had lost their antique reputation. It was now known that in syphilis mercury did not destroy the virus, but acted otherwise; and in intermittent fever quinine did not neutralise the malarial poison, but acted simply against the syndrome of intermittence. Therapeutics should be grounded neither upon a concrete nor abstract idea of disease, nor upon the management of symptoms—which was a method fit only for homœopathists,—nor upon the search for specifics. The treatment of diseases should be grounded on the physiological mechanism of lesions and symptoms. When this mechanism shall have been known, and when the primordial lesion and the symptomatic group or syndrome of a disease shall have been determined, we shall have made an immense progress in medicine. Medicaments had no peculiar virtue opposed to disease, but they exercised a physiological action upon organs or elementary tissues, and this action manifested itself either by a change in the nutrition of the tissues, or by a functional disorder of the nervo-muscular system, or through a modification in the eliminating organs. Now these physiological actions obtained equally in morbid conditions. Thus, then, physiology ruled the whole clinical problem. Its laws presided over the development of the symptoms, over the mechanism of the morbid lesions, and over the mode of action of remedies upon these deviations. A clinical trilogy, entirely founded upon physiology was thus constituted; and to the promotion of this physiological *clinique* he would henceforth consecrate his constant efforts.

HOPITAL LA PITIE.

Professor Broca commenced by saying that he had only to make a few preliminary remarks touching his views on clinical teaching. He considered clinical teaching as pathology in action. He intended opening a wider scope to clinical teaching than had been attempted by his predecessors. Roux and Jobert de Lamballe devoted their clinique exclusively to the detection of disease and to its treatment. Velpeau himself gave an exclusive predominance in his lectures to the determination and discussion of diagnosis. He used to insist at great length upon the differential diagnosis of disease. The lecturer criticised this plan as being too circumscribed, though he recognised its excellence. His clinical teaching, he said would embrace the whole range of instruction that may be furnished by the patient. Questions of anatomy, of pathological and normal physiology, would be discussed and commented upon, besides the other important questions of diagnosis, prognosis, and treatment. The whole pathological case would be investigated in all its bearings from both a scientific and a practical point of view. His course of teaching would involve three lectures a week during the winter session, and only one during summer; clinical exercises in the wards every day; and microscopical studies.

Medical Societies.

FEBRUARY—MARCH.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Dr. E. Meryon, Vice-President in the Chair.

ON A NEW AND SIMPLE METHOD OF INDUCING ARTIFICIAL RESPIRATION IN CASES OF ASPHYXIA FROM DROWNING, STRANGULATION, CHLOROFORM, POISONOUS GASES, ETC.

BY W. P. BAIN, M.D.,

Surgeon to the Poplar Hospital.

The author speaks of the necessity of the best and simplest means being employed in the above cases immediately and on the spot, and rapidly runs over the several methods which have been adopted up to the present time for restoring animation. He mentions in terms of considerable praise the mode of compression and relaxation of the walls of the chest, especially by simply pressing down the sternum, showing that as much as 600 cubic inches of air may be exchanged in the lungs this way in a minute—a plan of which it has been the fashion to speak rather disparagingly. He explains Dr. Marshall Hall's mode, which, although a very inconvenient one, is also better than it has lately been represented to be.

To Dr. Silvester he gives high praise for his discovery of utilising the muscles used in respiration, by drawing the arms over the head of the patient, thereby expanding the chest, and thus favoring inspiration. He finds fault with it, however, in its being a roundabout mode of accomplishing its purpose, and necessitating three separate movements.

The author then introduces a plan hitherto not known in this country, the invention of the celebrated Pacini, of Florence, which consists in placing the patient on his back on a table or bed, the operator having his abdomen against the head of the patient, placing his hands in the axillæ on the dorsal aspect, and then pulling the shoulders towards him with an upward movement at the same time. The shoulders are then relaxed, then the former movement, and so on alternately. In many cases operated on by this method the air makes a loud noise when it passes the larynx, as in snoring.

The author was so impressed with the excellence of this plan that he determined on his return from Italy to make experiments on it, as suggested to him by its illustrious inventor. He had not long, however, proceeded with these before he discovered two modes considerably superior, and throwing also somewhat in the shade the labors of Marshall Hall and Silvester. In experimenting on the dead subject he employed an india-rubber tube, one end of which was tied in the trachea, and the other communicated with a small spirometer, upon the principle of Hutchinson's, so that the passage of air to and fro the the lungs could be easily observed by means of a scale showing cubic inches. He found that the simple process of raising the upper part of the thorax from the table by taking hold of the arms caused a considerable influx of air, varying with the angle that the arms made with the body. For instance, if the body were raised by the arms at an angle of 45° (towards the face), the inspiration would amount to, say 20 cubic inches. If the body were lifted by the arms in a vertical direction the amount would be 15 cubic inches, and if pulled up by the arms at an angle of 45° (towards the feet), the amount would be about 10 cubic inches. But by the first of these modes a quantity of air considerably greater than by Hall's or Silvester's plan was generally obtained.

The best and most simple method, however, which the author has discovered is founded upon those of Silvester and Pacini. He simply places his fingers in the axillæ in their front aspect with his thumbs over the outer ends of the clavicles, and draws, with a certain amount of power, the shoulders towards him. On relaxing his hold, the shoulders and chest return to their former position, and so on with alternate motion. In this case, therefore, there is only one movement to be effected instead of three, and he avoids the fatigue of having to bear the weight of the patient's arms as well, as is required by Dr. Silvester's method. It has the advantage also of being accomplished in a more rapid manner than any other plan. As far as the author's experiments have gone, the quantity of air inspired at each movement by this plan is about 30 to Dr. Silvester's 20, and as the operation can be conducted with much greater rapidity, the author considers that at least twice the quantity of air can be inspired by this mode than by any other yet known; and he expresses a wish that a subject which is of such practical importance should be further investigated.

The paper was illustrated by lithographed tables, setting forth results of successive experiments with the various methods; and Dr. Bain explained that in the first experiment, the method of Silvester was first used, then that of Marshall Hall, then that of Pacini, then his own four methods in succession; and that the series was then re-commenced with Silvester's method again.

Mr. Bowles said that the description of the Marshall Hall method, as given by the author of the paper, was incomplete, and that, if practised as described, the method had not been fairly tried. Pressure on the spine when the patient was rolled into the prone position was an important element, and this had not been mentioned. In cases of drowning, the first thing to be done was to get rid of the water from the lungs, it having been proved by the experiments instituted by the Committee of the Society, that this water was the chief source of danger to life. The presence of water in the lungs of drowned persons had also been shown by Professor Casper. In the case of a patient brought to St. George's Hospital, and who died there shortly after arrival, water was found in the lungs churned into foam by the air introduced by the diligent practice of Silvester's method. In a case managed by Mr. Trollope, of St. Leonard's, the method of Silvester was first tried, and as the patient seemed to be losing ground, the Marshall Hall method was substituted for it. Water then flowed out of the mouth, and the patient ultimately did well. We do not usually find water in the mouth, because it escapes easily, even from the larger bronchi, during the transport of the patient; but it does not escape easily from the smaller tubes, and in them it may soon be churned into froth. There is no difficulty in the introduction of air into the chest, but the introduction of air is useless while the patient is in the supine position, and while water is retained. A person with suspended animation requires but little air, and any method will introduce enough. The important question is, By what method can the water best be got rid of? In conclusion, the necessity of perseverance, even in cases of apparent death, was dwelt upon by the speaker, and instances of recovery after prolonged immersion were related.

Dr. Silvester remarked upon the possible injury to the parts entering into and surrounding the shoulder-joints, as an objection to Dr. Bain's method. He thought it similar in principle to his own, but that it was safe to act upon the chest through the arms. He objected to frequency of artificial movement; and maintained that, if the movements were too frequent, air would not pass below the bronchi, as might be determined by the use of the stethoscope. Dr. Bain had explained in what order his experiments were to be read; and, so reading them, they seemed to show that the power of introducing air into the chest increased in proportion as the efforts of the operator were continued. Dr. Bain had been less successful with his (Dr. Silvester's) method than the Committee of the Society; and he would himself undertake to introduce into the chest by means of it, not thirty or forty, but sixty, cubic inches of air. He was himself desirous to get rid of water when it was present, but did not believe that it usually entered the lungs. He had failed to introduce it even by injection; and, if it did enter, it could not be got out again either by the Marshall Hall method, or by position. The Marshall Hall method was not new, but had been used and reported upon by the Royal Humane Society a century ago. It was open to grave objections, and often seriously injured the patient.

Dr. Headlam Greenhow observed that Dr. Bain's method was certainly the best, if excellence could be tested by the quantity of air that was introduced. He believed that water was distinctly inhaled into the lungs in drowning, when people fell into the water in a state of consciousness, and made efforts to breathe. Water was not found in the lungs at post-mortem examinations unless they were made soon after death. It became absorbed, or in some way disappeared. The period of immersion after which recovery would be possible would vary very much in different cases, and would be longest where there had been no efforts to breathe (as when people were stunned when they fell into the water), by which water could be forced into the lungs.

Dr. Peacock suggested that the question of the comparative merits of Dr. Bain's and of other methods should be referred to a committee for investigation.

The President inquired whether it was the pleasure of the Society that the debate should be prolonged beyond ten o'clock; and it having been decided in the affirmative,

Mr. Clover referred to the great importance of being acquainted with the best means of maintaining respiration in cases of suspended animation from anæsthetics; and expressed a belief that more of such cases than usual might possibly occur in consequence of the free use now being made of nitrous oxide. He thought, in chloroform cases, that the first thing to do was to expel the chloroform-laden air from the chest, and then to maintain artificial respiration. He found that respiration always stopped before the action of the heart; and he had himself used Silvester's method with great advantage. He had seen resuscitation after forty seconds of suspended breathing. He recalled to the Society Dr. Marcet's apparatus for supplying air to the lungs.

Dr. Carter confirmed Dr. Silvester's statement about the antiquity of the Marshall Hall method, which had been used by midwives in Dr. Marshall Hall's native county from time immemorial as a means of recovering new-born infants apparently dead. Dr. Marshall Hall stood in the same sort of relation to the method that Jenner did to vaccination. He expressed surprise that the best means of maintaining artificial respiration had not been adverted to by any speaker. This was the application of a Faradaic current to the phrenic nerves, where they pass over the scaleni muscles, according to the method described by Professor Ziemssen. By this means patients apparently dead from chloroform, and from the inhalation of carbonic acid and of coal gas, had been restored to life; and recently Pernice had applied the same means successfully to new-born children, who could not be made to breathe in the ordinary way. One of the convenient galvanic batteries now made by Stöhrer and others should always be at hand when chloroform was being administered, or at places where deaths by drowning were liable to occur.

Dr. Barnes confirmed the remarks of previous speakers with regard to the inconvenience or danger of the Marshall Hall method as applied to infants, who were very liable to be injured by it. He described a case of recovery after submersion for a period of at least five minutes.

A Fellow suggested that Dr. Bain's plan might be used in the prone position, which would facilitate the escape of water.

Mr. Jones said that several years' experience as house-surgeon at St. George's Hospital led him to prefer the method of artificial respiration by intermittent pressure upon the parietes of the chest and abdomen. The difficulties of the Marshall Hall method were very great, especially with heavy or bulky patients. He related the case of a new-born child apparently dead, and tied up in a parcel with a ligature round its neck, but that eventually recovered, to illustrate the importance of perseverance in efforts to restore suspended animation.

Dr. Bain thanked the Fellows for the attention with which they had listened to his paper, and for the observations that it had called forth. His only object had been to find the simplest and easiest method of introducing air into the lungs. He could not explain the better results obtained by his method, unless—and the idea had only occurred to him during the debate—they might be due to the circumstances that the thorax was elevated directly, through the clavicles and sternum, instead of indirectly through the latissimi muscles.

◆

PATHOLOGICAL SOCIETY OF LONDON.

MR. SIMON, F.R.S., President, in the Chair.

DR. MURCHISON, on behalf of the Committee on Morbid Growths, read a report on Mr. Wyatt's case of diseased supra-renal capsules. Their structure was pronounced normal, but they were surrounded by rounded bodies projecting from their surface, really accessories from the capsules, but presenting no trace of diseased structure.

Mr. Hulke read a report on the facial tumour exhibited by Mr. Weeden Cooke. It was chiefly corpuscular, in some parts something like colloid; on the whole it was rather like the structure of the navel-string or vitreous humor than anything else.

Mr. Busk exhibited some of the bones of a Fossil Rhinoceros found in a gravel pit in Essex. The animal was small, but aged, and of high antiquity. The tibia was diseased, presenting marks of chronic osteitis, perhaps rheumatismal. The radius was enlarged, probably from the same cause. The same gentleman showed the tibia and part of the fibula of a bear, which had sustained a fracture, probably compound, resulting in a good deal of shortening. The animal had probably sustained the injury just before going into winter quarters. There were many diseased bones both in the caves of Gibraltar and in Belgium. In another bone shown by Mr. Busk there was a well-marked node.

Dr. Murchison asked if similar forms of disease were known to prevail among wild animals at the present day.

Mr. Busk could not exactly say as to animals in the wild state. When confined they became extremely liable to disease, not however, of the same kind as that described.

Mr. Adams said the disease was not related to what we called rheumatic arthritis, seeing that the latter originated in cartilage, whilst this appeared to proceed from the periosteum, the cartilage not being affected.

Mr. T. Smith asked if the enlarged specimen had been probed, as it looked as if it contained dead bone.

The President remarked that these were the first specimens of such an ancient date laid before the Society.

Mr. Coles exhibited a living specimen said to be without radius and ulna on the right side. It was, however, discovered that all the bones were present on both sides, although in an extremely rudimentary form.

Dr. Cayley exhibited some microscopical specimens of the Cerebral Arteries removed from a girl who died of apoplexy. She had been healthy, but was one day suddenly seized with a great desire to pass water, but could not for a time. This was followed by pain in the head. She became unconscious and comatose; there was slight twitching of the muscles, and she speedily died. In the left middle cerebral lobe, and in the ventricle, was a large clot. The small arteries in the neighborhood were hard, thickly studded with nuclei as of tubercle; some also contained oil-globules. There was no means here, as in the liver and peritoneum, of distinguishing tubercle from inflammatory products.

Dr. C. Bastian said that such appearances had been often observed in association with small aneurisms by Charcot and others, generally, however, in patients of middle age. In one case the individual was only twenty.

Dr. Cayley also exhibited a Femoral Aneurism which had undergone a spontaneous cure, though it had led to the death of the subject. The patient was aged fifty, and syphilitic. He was kicked in the belly by a horse in 1867; a tumour formed, which by-and-by increased and pulsated. Soon after one formed in the thigh, and as this increased that in the belly diminished. The tumour in the thigh was very painful, the pain darting down to the shin. By-and-by the pulsation abated, but œdema gradually extended to the whole limb, and the foot became gangrenous. The œdema ceased, but the gangrene remained stationary, the parts slowly separating. Erysipelas of the thigh and ankle set in, which greatly reduced his strength, and he died exhausted. The tumour in the thigh consisted of the consolidated aneurism and a mass of horribly stinking pus, which had dissected out the vessels. There were two small aneurisms on the right side, and no sac about the pus.

Mr. W. Adams exhibited a specimen of Atrophied Scirrhus of the Breast, from a married lady. Four or five years ago there was some pain, first on one side, then on the other. The breasts remained indurated for a time, but there was no enlargement. By-and-by they began to shrink, and the nipples became retracted. About ten months ago pain in the legs began, ultimately ending in paralysis. The intellect was not affected. The fifth and seventh nerves became affected, and the cornea sloughed, whilst the face drooped. She died seven months after her confinement to bed. The brain and cord were alone examined; they presented marks of inflammation only.

Mr. Arnett asked if the axillary glands were affected, or if there was any deposit in the brain.

Mr. Hulke said he had only examined the specimen cursorily. He thought they consisted of connective and yellow fibrous tissue merely. There were no cancer elements.

Mr. C. Moore said it looked more like uniform degeneration of the entire mammæ than a specimen of cancer.

The President remarked that there were several points of interest here. The question was not one of cancerous tumour, but of cancerous scar. He doubted if cancer ever affected a scar without going on elsewhere. Double cancer also, as in this case, was extremely rare. Altogether he thought it most probably inflammatory. He could recall a case where the cancer withered from cold, but was found in the viscera. He proposed to refer it to the Committee.

Mr. T. Smith said Mr. Paget, who attended the patient, always looked upon the case as undoubtedly cancerous. Mr. Paget had seen another where he thought the atrophy was consummated.

Mr. J. D. Hill had seen a case somewhat similar.

Mr. W. Adams next proceeded to show and describe some Syphilitic Tumours removed from under the skin of the Leg. They were apparently fibrinous. Many others were removed from the lady's leg during the last seven years. A tumour appears, ulcerates, and slowly separates. Nearly the whole cellular tissue of the leg had been thus removed. Some of the patient's joints have suffered from syphilitic synovitis.

Dr. Kelly showed a specimen of Primary Cancer of the Femur. The patient, a shoemaker, complained of pain above the knee for some time, when he fell and snapped his thigh. The pain increased, and a large tumour could be felt, and with care crepitation was detected. The thigh was removed, but the patient died, apparently from exhaustion. There were in the viscera several pyæmic deposits, but no cancerous masses. Behind the tumour was a large shallow groove for the vessels.—Referred to Committee.

Dr. Kelly also showed a specimen of Fractured Coracoid. The wheel of a loaded vehicle went over a man's head and shoulder. He was killed. Both coracoid and acromion were fractured, and the ligaments were torn.

Dr. Beigel showed some Brain Sand from the Choroid Plexus. The patient, a woman aged fifty-four, was epileptic and very weak, her intellect was diminished, and she was choreic. The power of articulation was lost, and she died comatose. The choroid was cystic, and contained much sand. Similar masses had been found in the ovary, and even in healthy urine.

Dr. Williams, jun., asked if there had been any chemical analysis of this sand.

Mr. Busk said it had been found to consist of carbonate of lime. He thought Mr. Rainey's experiments explained its formation.

Dr. Wilks remarked that one of the earliest specimens brought before this Society was brain sand, with an analysis thereof by Dr. Quain. This sand only indicated further changes in the brain, changes ordinarily associated with obscure brain symptoms.

Dr. Bastian had found, in several cases of inflammation of the surface of the brain, sand throughout its substance.

Dr. Moxon exhibited a specimen and drawing illustrative of Tubercular Phthisis occurring at the base of the lung. This was exceedingly uncommon, for it was not pneumonia occurring in a person disposed to phthisis. He found a suggestion as to its causation in contracted patches with dilated air-cells in the upper part of the same lung,—evidence of former deposits in that situation.

Dr. Powell had observed, in a case where there was emphysema with contractions, that when attacked by tubercle a second time the base was implicated.

Mr. Legg showed a Dissecting Aneurism of the Aorta from a man aged forty, who died in the streets. His pericardium was full of blood, the aorta dilated and torn transversely. The coats were separated upwards and downwards. In two places the aneurism opened into the aorta. A small opening through the external coat allowed the escape of the contents into the pericardium.

Two reports were first read—the one, by Dr. Andrew, on Mr. Adams's case of tumour of the breast, which seems to have been cancerous; and the other, by Dr. Sanderson, on Dr. Murchison's specimen of deposit in the intestines, the heart, &c., due to the infiltration throughout large tracts of the connective of corpuscular lymph, similar to that composing the syphilitic gummata. The Committee on Morbid Growths declined to give a name to the disease at present; and they also confirmed the description given by Dr. Beigel of the microscopic appearances presented by his case of lepra tuberculosa.

Dr. Thudichum's spectroscopic researches in regard to luteine were also commented upon on the same occasion.

Mr. Jessop (of Leeds) exhibited specimens of Disease of the Supra-renal Capsules, and of Fibro-cellular tumour of the Scrotum.

Dr. Powell showed a specimen of Aneurism of the Aorta, and another of Diseased Supra-renal Capsules.

Mr. Mason exhibited a specimen of Necrosis of the Tibia; the complete circumference of the bone had been removed.

Mr. Curling wished to know whether the connexion between the upper and lower part of the bone was destroyed. Mr. Mason replied in the affirmative.

Dr. Legge showed a specimen of Aneurism of the Aorta.

Dr. Cooper Rose showed a large Vascular Tumour, occupying the whole face of an infant not many hours old.

Mr. Heath exhibited an Aneurism of the Subclavian Artery of the Right Side, with a second Aneurism of the Left Side, which had undergone spontaneous cure. One vertebral artery was occluded.

Mr. Heath (for Mr. Swayne) exhibited the part after Pirogoff's operation had been performed, showing the union of the os calcis with the tibia.

Mr. Maunder drew attention to the necessity of not preserving too much of the os calcis. The saw should be applied just in front of the tendo Achillis, and the bone sawn from above downward. By this procedure a much firmer union would be obtained.

Mr. Bruce brought before the notice of the Society two patients affected with Keloid, taking its origin in the one case from a scald, and in the other from suppurative action of the skin,—i. e., after severe acne.

Mr. Maunder lastly exhibited a man whose elbow-joint he had excised primarily, and who had a most useful joint.

◆

MEDICAL SOCIETY OF LONDON.

Dr. B. W. Richardson, F.R.S., President in the Chair.

ON GALL-STONES.

Mr. Peter Marshall exhibited a patient, a man aged forty-six, who had had abdominal pain, with occasional jaundice, since the age of seventeen. Fourteen years ago a large abscess occurred in the right lumbar region, which discharged first blood, afterwards thin watery fluid. After nine years the abscess healed, leaving two cicatrices; a short time subsequently three small abscesses were observed in the groin, from the lowermost of which was obtained a biliary calculus, weighing twenty-four grains. The case is probably unique.

Dr. Thudichum considered that in this case the cystic duct had been obliterated long before the abscess formed; dropsy of the gall-bladder followed. The man now possessed no gall-bladder.

Mr. Gay considered that the extraordinary course taken by the gall-stone was due to some obstruction at the ordinary points of exit. He related an interesting case occurring in the practice of the late Dr. Hodgkin, wherein exit took place in the right hypogastrium. He thought gall-stones in some cases might be removed by surgical means. Gall-stones, in his opinion, were not always formed in the gall-bladder.

Mr. Hutchinson exhibited two large gall-stones passed by the bowels. The pain lasted about four days in each case.

Mr. Streeter detailed a case wherein the symptoms were those of intestinal obstruction. At the post-mortem examination a gall-stone of great size was found in the ileum, and a large fistulous opening was seen between the pyloric end of the stomach and the duodenum, the proper pyloric outlet being closed by adhesion. The patient had been the victim of tight-lacing.

Mr. Hainworth showed (1) a concretion which formed a perfect cast of an enlarged gall-bladder and cystic duct; (2) a gall-stone of cholesterine, internally in concentric laminæ, externally in concentric crystals; (3) a series of five faceted concretions, with débris, obtained from one patient.

Dr. Leard read a paper "On Gall-stone." There are four situations in which gall-stones give rise to morbid symptoms: (1) in the common duct, in which case they cause pain and, if their passage is protracted, jaundice; (2) in the cystic duct, in which case jaundice is absent; (3) in the hepatic duct—jaundice occurs if there is protraction; (4) in the ducts within the liver, when jaundice may or may not occur, but there is a condition resembling intermittent fever. Pain is greatly modified by individual susceptibilities. The great seat of pain is the epigastrium. The author discussed the differential diagnosis of the extrusion of biliary and of urinary concretions, as well as of gastralgia and hysteric pain; and he detailed some interesting cases, particularly one in which, after severe pain, there was a sudden relief, and the right side of the abdomen was found to be dull on percussion; peritonitis set in; and at the autopsy the gall-bladder was found ruptured. Dr. Leared objected to the evidence which had proclaimed that mercury is not a cholagogue.

Dr. Thorowgood followed with a paper on the same subject. He narrated the case of a female who, after an instrumental labor, followed by convulsions and a miscarriage some months subsequently, became subject to epigastric pain, accompanied by shivering. The author detected a small tumour in the region of the gall-bladder. Various other diagnoses had been made, but he confirmed his own view by an examination after the lapse of time, and this was subsequently established by the passage of masses of inspissated bile. In a second case, a patient died after peritonitis for a month; there was found a rough oval gall-stone in the abdomen, the gall-bladder being obliterated. He believed in the cholagogue virtues of mercury. The treatment he advocated was belladonna as a sedative, perchloride of iron and chloride of ammonium.

Dr. Thudichum dwelt on the importance of the pre-existing signs of gall-stone. There was first constipation, then decomposition of bile within the channels, then shedding of epithelium, which formed the nuclei of concretions. He described the chemistry of gall-stones, and requested that any specimens might be forwarded to him at the laboratory of St. Thomas's Hospital, to aid the chemical history, which was now approaching completeness. It was clearly ascertained that mercury acts, *not* as a cholagogue, but chiefly as a purgative. No facts show that it increases bile; the green dejecta which give rise to this notion owe their appearance to the green sulphide of mercury produced.

Dr. Routh narrated a case in which the inhalation of chloroform was very successful, and in which without doubt the gall-stone was extruded from the duct during the anæsthetic state.

Dr. W. H. Day mentioned three cases confirming Dr. Leared's view, that pain in these cases is referred to the epigastrium.

Dr. Sansom adduced a case of periodic abdominal pain with jaundice, the results of impaction of inspissated bile in the ducts, in which, after an almost mortal injury from railway accident, the patient recovered, and now no longer suffered the hepatic symptoms. Can violent mental shocks arrest the habit of formation of these concretions? He suggested that the subject of gall-stones, and their effects, should be referred to a sub-committee of the Society.

The President mentioned a case in which he considered that a gall-stone passed into the stomach. He called attention to the peculiar cerebral symptoms existing in those suffering from gall-stones. There is not only an anxiety bordering on despair, but sometimes a direct congestion. He thought that mental strain could be a producing cause of the disease. He narrated a case in which the application of extreme cold to the abdomen entirely relieved the pain of the gall-stone, and facilitated its passage.

Dr. Leared and Dr Thorowgood replied.

◆

CLINICAL SOCIETY OF LONDON.

Sir Thomas Watson, President in the Chair.

Mr. Bruce communicated a case illustrating the advantages derived from Tracheotomy as a Remedy for Acute Diseases of the Larynx.

Dr. Marcet thought the apnœa necessitating tracheotomy in the present case was due partly to the swollen condition of the larynx, and partly to spasmodic closure of the glottis; the success of the operation resulting not only from the fact that the passage of air through the inflamed part was prevented, but also to the circumstance that the free admission of air into the lungs relieved the disturbed balance between the circulation and respiration which might have been the main cause of the laryngeal spasm. He had witnessed a case similar to Mr. Bruce's in many respects, and also cured by the same means.

After some remarks from Mr. Holmes respecting the different causes of dyspnœa in these affections,

Dr. Williams dwelt upon the good effects produced by the use of antispasmodic remedies, and alluded to the beneficial effects of chloroform vapor.

Mr. Thomas Smith thought it scarcely necessary to regard the lung congestion as the cause of the spasms of the larynx, and alluded to the frequency with which the admission of cold air through the trachea was followed by pneumonia.

Mr. Kesteven mentioned his experience as to the great danger from the supervention of spasm in these cases.

Mr. Bruce referred to some instances in which the use of chloroform had greatly added to the severity of the symptoms.

The President drew attention to an instructive case in which Sir Charles Bell was about to perform tracheotomy, when he observed the scar of a previous operation over the front of the trachea. This led to further inquiries, and the postponement of the operation. The patient, a young woman, presently recovered from what proved to have been a purely hysterical affection. The President made some further remarks enforcing the importance of distinguishing this class of spasmodic affections of the larynx.

Dr. Powell communicated two cases of chronic disease of the lungs, presenting the characters of Fibroid Phthisis. His remarks principally related to treatment. He enforced particularly the importance of ensuring the complete resolution of acute pneumonia or pleurisy, before allowing the patient to resume his usual mode of life, and recommended iodide of potassium and alkalies as the most important remedies. He had also derived great advantage from iodine inunction.

The President then called upon Dr. Pollock, who, in conjunction with Dr. Clark, had been appointed at a former meeting to report on Dr. Powell's cases. Dr. Clark being absent,

Dr. Pollock said, as the report on the cases was in the hands of his coadjutor, he much regretted that it could not be read to the Society, the more so as, although Dr. Clark agreed with him in every particular as regards the facts, he was not entirely at one with him as to their significance. He regarded both the cases under discussion as having originated in acute pneumonia, or pleuropneumonia. One appeared to him still to come under this heading, while in the other the state of the primary condition had been followed by tuberculosis of the opposite lung. In the course of his observations, Dr. Pollock adverted to the charge of too great comprehensiveness made by Dr. Clark against those who use the word phthisis in the ordinary sense; and, in return, submitted that Dr. Clark himself had brought together under one term, that of "fibroid phthisis," a number of cases, some of which were certainly not phthisis, while others did not possess the anatomical characters which he had himself described as those of "fibroid" change.

Dr. C. J. B. Williams adverted to cases in which pulmonary contraction arose from repeated attacks of bronchitis, independently of pneumonia or pleurisy. He agreed with Dr. Pollock in regarding such cases of rare occurrence. He considered that, under the circumstances, fibroid change was a curative process, in which respect he differed entirely from Dr. Clark.

Dr. Greenhow drew the attention of the Society to the form of contracted lung which is met with in persons with chronic bronchitis resulting from the inhalation of pulverulent substances.

The Secretary communicated for Dr. Crouch a case of Primary Amputation for Gunshot Wound. The operation was performed, before the patient had recovered from the shock, just below the knee. There was subsequently severe delirium, and a protracted convalescence.

Mr. Callender considered that in this case the amputation was rightly performed whilst the patient was yet suffering from the shock, and pointed out that, in a young subject, an operation was usually well borne in such a state of the system. He referred to the site of the amputation as accounting for some troublesome abscesses which formed along the tracks of the extensor tendons.

Mr. Maunder thought it contrary to recognised principles to amputate during collapse; and he urged that the good results which followed in this case must be regarded as exceptional. He had once amputated when there was extreme prostration of the nervous system, associated with complaint of urgent pain, but such a case he regarded as quite distinct from instances of ordinary so-called collapse.

Mr. Crouch, in reply, said he had followed the rule distinctly laid down by Abernethy for the treatment of cases similar to the one reported.

Dr. Pavy related a case of Diabetes in a female patient, aged sixty-eight, in which the treatment consisted mainly in the exhibition of opium in gradually increased doses, without restriction of diet. The first effect of the drug was limited to a diminution of the quantity of urine, without change in its specific gravity or in the relative quantity of sugar contained in it. But eventually, as the dose was increased, the daily excretion of sugar diminished, until the urine became entirely natural. Throughout the whole period of treatment, the dose of opium, the quantity of urine, and the quantity of sugar excreted in twenty-four hours were recorded daily, so that the effect of the remedy could be accurately judged of. By way of further illustration, Dr. Pavy mentioned two other cases, one treated by opium, the other by morphia, in which the beneficial results obtained were equally striking.

A discussion followed, in the course of which Dr. Weber referred to the occasional recurrence of diabetes in patients apparently cured, whether by diet, regimen, or otherwise; and suggested that the case should be further reported on after an interval of six months; while the President drew attention to the age of the patient, with reference to the question whether diabetes is not more tractable, and at the same time more liable to recur, in elderly persons than in the young.

Dr. Pavy, in his reply, admitted that in advanced life diabetes might be regarded as a comparatively trivial disorder.

Dr. Beigel read a paper, founded on 152 cases of Epilepsy, from which he inferred, that although unconsciousness and convulsion are so frequent as phenomena of the epileptic paroxysm that most writers regard them as characteristic, there are many cases undoubtedly of epileptic nature in which these symptoms are absent. He considered that the only invariable pathognomonic signs of epilepsy were those which arose from disturbances of the circulation, and set forth various facts and observations which had led him to localise these disturbances in the vaso-motor nerves. As regards the treatment of epilepsy, Dr. Beigel believed that the most important remedy for continuous administration was the bromide of potassium. He further strongly recommended the subcutaneous injection of morphia, guarded by atropine in the manner suggested by Dr. John Harley, immediately before an apprehended attack, as a means of warding it off, or at least of modifying its violence.

Dr. Green related a case, which he described as one of Irritative Hypertrophy of the Heart. The patient, a girl of fifteen, was admitted into hospital in the fourth or fifth attack of acute rheumatism. Soon after pericarditis supervened, and she eventually died, with great hypertrophy, adherent pericardium, and "finely granular" degeneration of the muscular fibres of the whole heart. In explanation of this and other cases in which hypertrophy occurs in young rheumatic persons, independently of any mechanical cause, the author maintained the theory that the overgrowth is intimately connected with chronic myocarditis.

Editorial.

PRACTICAL MEDICAL EDUCATION.

Our attention has recently been called by many correspondents to the defective character of modern medical education with regard to certain matters that are of considerable importance, and that cannot, from their very nature, be included within the scope of hospital teaching as it is at present conducted. It is manifest, we apprehend, that the power of a young medical man to commend himself to the public will be much dependent upon his familiarity with the symptoms and management of a variety of trivial ailments, nursery and other; and upon his power of talking to and managing patients, altogether without reference to his knowledge of their diseases. The old system of apprenticeship, however great its disadvantages, did certainly educate young men to the actual details of their work in life, taught them how to ask customary questions, to express customary sympathy, and to explain common ailments by the customary explanations. It taught them also how to conduct professional business; how often to visit patients, and when to retire from the convalescent; and it afforded them opportunities of treating maladies that are common in practice, and that are seldom or never met with in hospitals. Complaints now reach us to the effect that the young men who obtain licences from the examining boards have probably never seen scarlet fever or measles; that they betray at once, to the perceptions of experienced patients, their ignorance of the various and time-honored shibboleths of the family doctor; that they are unskilful dispensers; and that, in short, although qualified, they are of little value as assistants. The real pinch of the grievance, moreover, is that the practitioner of a few years ago, who took an apprentice, who taught him the particular matters in question, and who then without expecting too much, made the best use he could of him, was the gainer of a handsome fee by the transaction; while the practitioner of to-day, who receives no fee, finds that he has to pay a "qualified" assistant to do the apprentice's work. The case is one that eminently deserves consideration, and for which it would not, we think, be difficult to find an appropriate remedy.

As regards apprenticeship, however, there can be no question of its revival in any form. It is the proper entrance to a mechanical trade, and to a mechanical trade alone. As designed by the framers of the Apothecaries' Art, it was absolutely prohibitory of a liberal education; and, even as commonly modified by private arrangements, it was prohibitory in a very great degree. We are now beginning to understand that Medicine presents to its followers the most complicated and the most profoundly difficult problems that attend upon any branch of human inquiry; and that these problems not only cannot be solved, but that their conditions cannot even be appreciated, excepting by faculties that have been prepared for the task by careful educational training in early life. The want of this training no after efforts can supply; and it would be easy to illustrate our position by reference to the words and works of men of great natural powers, great industry, and consequent great attainments, who, nevertheless, strive in vain to please the fastidious or to satisfy the philosopher. The great drawback to our profession, the great hindrance to its holding its proper place in society and in legislation, is that men of imperfect education have been admitted into our ranks; and the only reform really needed amongst us—the one reform that would comprise all others—is to exclude them rigorously for the future. Once admitted, they become—because a chain is no stronger than its weakest link,—in one sense, representative men. It is impossible to overlook the change that has taken place in the status of the clergy, as an effect of the admission of "literates" to holy orders; and a similar change, although in the opposite direction, would speedily follow the strict enforcement of a demand for real liberal education amongst ourselves. Even if the training afforded by apprenticeship had been, in all cases what its advocates assert, we should still hold that it entailed more loss than gain, and that any return to it was impossible.

It is not on that account, however, to be supposed that we would exclude the general medical practitioner from all share in the great work of medical education. He might take his part, and that a most important one, at a later period. We would suggest, that when some advance had been made in the student's career, when he had acquired and given evidence of sufficient knowledge to be trusted in positions of some responsibility, it might be made part of his recognised course of study to go and take a share in the active duties of a practice, before being himself admitted to examination as a practitioner. To an advanced student, six months thus spent would be fruitful of good. It would be necessary for the authorities to require evidence of the suitability of the practice to which a young man was sent; and the temporary tutor would, of course, receive a proper payment for the instruction, opportunities, and countenance that he would afford. The pupil would at once be capable of being made highly useful; but the standard of efficiency of a "qualified assistant" would not be expected from him by anybody.

The only objection we can forsee to this proposal may be summed up in two words—money and time. We reply that the money and the time would be well spent. It has been the traditional policy of the chief examining boards in England—the College of Surgeons and the Apothecaries' Company—to foster the cheap and nasty, and to wink at all sorts of arrangements by which the time supposed to be devoted to study was really given to the earning of daily bread. In this way a few very poor men have been enabled to enter the profession; and it would probably have been better for everybody, and especially for themselves, if they had been kept out. But the examining boards were held to be justified by the plea that was advanced by the lawyer who took a fee in copper from his client. It was all the client had. The College obtained the money for its diploma, and it could not bring itself to insist upon time that the student could not afford to bestow.

Save in the most exceptional circumstances, the medical profession, if it is to be followed with dignity and self-respect, requires the possession of moderate capital; and there can be no worse policy than for its rulers to aim at cheapness of education. When examiners underbid one another in requirements, their licentiates, quite naturally, underbid one another for parish appointments and for clubs. The poor man, like the illiterate man, is a weak link. He seldom does much good for himself, and he often does incalculable mischief to others. We feel for him as an individual, but we are none the less sure that he must perish in the "struggle for existence," and none the more desirious that the whole profession should be injured by struggle being unnecessarily prolonged.

THE REFINEMENTS OF MEDICAL PRACTICE.

There is a portion of medical education which would seem to be imperfectly provided for in the existing methods of instruction at our schools. Upon entering practice the medical man finds himself called upon to write, at a moment's notice, prescriptions which will not only be likely to benefit his patients, but which have often to bear the scrutiny of persons well qualified to judge of the language in which they are couched, and disposed to compare them with others in their possession. With certain honorable exceptions, we do not think that teachers apply themselves to this branch of instruction—the writing of prescriptions—with the energy which they might display. There are plenty of men turned out of the schools each year well qualified, as regards their knowledge of pathology and the *principles* of treatment, to hold their own perfectly well, and to act as safe guardians of the public health; but set them down to write a prescription in tolerable Latin, and with a just recognition of the qualities of the drugs employed, their compatibility or appropriateness of dose and form, and they will produce results sufficiently remarkable to excite the astonishment of any druggist's assistant who is used to the well-conceived productions of more experienced advisers. We chance to know that at two recent examinations the deficiency of candidates in this respect was very striking. At the examination in Medicine at the College of Surgeons, there were instances of lamentable ignorance in regard of the proper doses of drugs; whilst even at the second M.B. examination of the London University—the last place where such ignorance would be looked for,—signal examples occurred of men, otherwise well instructed, who could not write a decent prescription in Latin. There is, no doubt, one good reason for this deficiency. In hospital practice, students are so much more accustomed to see the severest forms of organic disease than functional derangements of passing character, that they are, in the nature of things, from observing the inertness of drugs in checking the tendency to death, disposed to scepticism about the value of such agents. It is one of the weak points, indeed, of medical education that the student can with difficulty receive adequate instruction respecting the class of ailments which abound in private practice, but are rarely seen within the walls of hospitals. In this respect he, no doubt, was better circumstanced under the old system of apprenticeship. Scattered through the kingdom, there are great numbers of private practitioners who, from long experience, have acquired for themselves a knowledge of the use of drugs, and the best mode of employing them, which is of daily service in their practice. This knowledge, it must be allowed, cannot altogether be *taught* anywhere. The lesson has to be learnt in great part by the practitioner himself, and he has often to go through many disappointments and mortifications ere he learns it. The inapplicability of a drug under certain circumstances, its objectionable qualities as regards taste, form, and color to persons of peculiar nature, the results which it produces, and the time occupied in producing them, together with numberless other apparently trivial but really important matters, constitute bits of knowledge which often make all the difference in the success or failure of a medical man's career. And here we would urge that great consideration is due to the public upon such points. Our patients blindly swallow what we order them; follow our instructions, however disagreeable; and it is palpably a duty which we owe to society that the results which we seek to attain should be brought about with the least discomfort possible to those who thus submit themselves to our orders. Every day's experience shows us that for almost every therapeutical indication there are several modes of arriving at an equally good end, some easily followed and not disagreeable, others in the last degree vexatious and uncomfortable. Successful general practitioners expert in this kind of knowledge may, and very often do, impart the most useful hints to their pupils upon this subject—hints which in their future career they turn to profitable account. The physicians and surgeons of our hospitals, equally well-informed as they doubtless are in such matters, do not, we think, always reflect upon the duty of impressing such experience upon the pupils in the wards. We have seen, over and over again, in the metropolitan hospitals, prescriptions which we should never dream of employing in the case of a private patient. The different habits of life which make the treatment suitable in the one case would pretty certainly entail the loss of a patient if it were employed in the other. It is for the teacher to remember this difference, and to point out the fact to his pupils. It is for him also to see, by frequent examination, that the student is able to frame his thoughts, when prescribing, in suitable words, and with a just appreciation of what is sought to be effected by the prescription. The world is large. For every patient unhappily afflicted with irremediable disease, the practitioner will meet with fifty in which a dexterous employment of the drugs at his command will make all the difference in the sufferer's comfort, and in the duration of the passing malady. To effect this object, however, he must have that delicate insight into the uses of drugs which is not acquired without a good deal of trouble in the wards of an hospital. But whilst we thus allow the difference of the circumstances and the difficulty of contending against them, we still think that more might be done in the way of teaching the student to exercise a little taste and refinement in the writing of a prescription, and in ensuring that he is accurately acquainted with the appropriate doses of the drugs he employs.

THE PATHOLOGY OF TIC.

In a recent paper by Drs. Eulenberg and Guttmann, contained in a publication of which only one volume has appeared, and which, from the excellence of the memoirs collected in it, deserves to have a wide circulation—the *Archiv der Psychiatrie*,—an attempt has been made to describe collectively the principal diseases dependent on lesion of the sympathetic nerve. There can be little question that this portion of the nervous system is the frequent seat of lesion, and that some of the more obscure forms of disease owe their origin to structural or functional disorders affecting its ganglia, or that portion of the spinal cord from which its fibres, in part at least, take their origin. The three forms of affection described in the paper we allude to are, traumatic lesion of the sympathetic, hemicrania or tic douloureux, and exophthalmic goitre. We shall select the second of these as containing the most interesting observations to the generality of our readers, merely premising, in regard to the first, that when produced by aneurismal, lymphatic, or other tumours in the neck, the symptoms, as described by Drs. Ogle and Gairdner, closely resemble those produced by paralysis of the sympathetic following experimental section in the neck, and which have been very fully described by Brown-Séquard and others. The pathology of hemicrania and tic is confessedly very obscure; and various hypotheses have been put forward to explain the phenomena which characterise the disease. Some have attributed them to neuralgia of the brain, others to hyperæsthesia of the brain, and many have noticed the pain in these cases to be associated with vascular disturbances, flushes and partial congestion, which often present a periodical character; and occur with special frequency in women at the catamenial periods. The theory advanced by the authors is partly based on the case of Dubois Reymond, described by himself, which possesses a double value, not only as being recorded by so careful an observer, but also from the prominent symptoms it presents. M. Dubois Reymond observes that the tic from which he suffers is connected with, if not produced by, tetanus of the vaso-motor nerves of that side of the head, or tetanus of that portion of the cervical sympathetic which supplies the part; since the temporal artery, when the pain is present, feels hard and wiry, the face is pale, and the right eye small and congested. With the departure of the attack the vessels relax, and the right ear becomes red and hot. He notices, also, which is of importance in support of his view of the nature of the disease, that during the attack the right pupil is dilated. The question arises whether the affection of the sympathetic indicated by these symptoms is only an accompaniment of them or is to be regarded as their cause. Dubois Reymond believes that the pain proceeds from spasm of unstriped muscular tissue, analogous in its nature to the pain experienced in cramp of the voluntary muscles; but Eulenberg suggests that it may possibly be due to the diminution in the supply of blood resulting from the contraction of the temporal artery, which may reach a point where it becomes equivalent to an intense stimulus applied to the sensory nerves. The good effects of coffee and of quinine may perhaps be explained by a reference to their influence on the sympathetic and vaso-motor system, but they may act by increasing the tone of the arterial walls. In a paper by M. Möllendorff, written apparently without any knowledge of Dubois Reymond's case, or of his mode of explaining it, the theory is propounded that hemicrania essentially consists in a partly typical (periodic) and partly atypical unilateral want of power of the vaso-motor nerves controlling the carotid artery, occasioning relaxation of the arterial walls and an increased flow of arterial blood towards the cerebrum; and in support of this theory he adduces the two following facts: First, that compression of the carotid on the affected side during the attack effects an instantaneous removal of the pain, though this returns, when the pressure is released, with the very first pulsation; whilst inversely, pain is induced by compression of the carotid on the opposite side. Secondly, ophthalmoscopic examination shows dilatation of the central arteries and veins of the retina—the latter, in particular, becoming knotty, tortuous, and dark-colored; and congestion of the choroidal vessels, occasioning, instead of the customary dark-red color of the fundus, a scarlet reflection. This stage would of course correspond to the second or relaxed period of the arterial walls on Dubois Reymond's view; or it may have been a form of hemicrania precisely opposite to that described by the latter author, and the pain must then be referred, not to anæmia, but to hyperæmia. Möllendorff also noticed diminished frequency of the cardiac beats during the attack, and, coincidently, the pulse in the radial artery was small and hard, whilst in the carotid it was full.

In regard to the treatment of this affection, Dubois Reymond only draws the conclusion that the remedies should be applied to the cilio-spinal region, whilst Möllendorff trusts to general measures. Our authors, however, observe that we know only one means which can be applied directly to the cervical sympathetic in strength proportionate to the requirements of the case—namely, the constant galvanic current; on which point one of the best authorities on the subject, Benedikt, has expressed himself in the most decisive terms. The mode of applying electricity recommended by them we will take a future opportunity of describing.

RECENT DERMATOLOGICAL RESEARCHES.

With the new year, several new periodicals have sprung into existence, and from one of them, the *Archiv für Dermatologie und Syphilis*, the first number of which lies before us, we propose to make a few extracts for the benefit of our readers. The first communication is from the pen of Professor Von Hebra, attesting the benefits of the adaptation of pads, gloves, socks, or even trousers, of vulcanised india-rubber linen (*toile caoutchouquée*), without any other application, in cases of eczema, as previously suggested by Professor Hardy, of Paris; and also in cases of psoriasis, ichthyosis, tylosis, and pityriasis, when it was requisite to remove dry epidermical masses. In all cases, the smooth side was placed next the part affected, and the linen was replaced once or twice a day with a fresh portion. This mode of treatment was also found to be extremely successful in several cases of that terrible affection, the prurigo senilis, abundant perspiration being induced, the itching ceasing, and sleep being obtained. The linen cloth used by Professor Hebra was made by J. N. Reithoffer (No. 2, Stadt Herrengasse), and seems to resemble our spongiopiline. We presume it could be easily produced by English fabricants of vulcanised india-rubber, and is certainly deserving of further trial. A second paper in the same journal is by Dr. H. Köbner and Paul Michelson, on "Parasitic Sycosis." The former of these writers had already, in 1864, published observations showing that a parasitic form of sycosis existed, which was produced by the Trichophyton tonsurans, a fungus is immediately associated with the Herpes tonsurans and circinatus. Whilst still maintaining this opinion, he does not deny that an idiopathic form of sycosis may also occur in which no fungus can be shown to be present. A case of the parasitic form is recorded by Michelson, caused by contact with diseased ox-flesh, in which Köbner's views were fully borne out.

We can only add a few remarks on an interesting paper by Moriz Kohn, on the "Nature and Treatment of Lupus erythematosus." This affection, which occurs in the healthy and strong, as well as in the strumous, of both sexes, consists of nearly circular spots, of variable size, the centre of which is covered by a thin, dark, yellowish-brown crust, or by cicatricial-like skin, whilst the margin presents a narrow, slightly elevated, bright-red line, beset with yellowish or smutty-brown scales and crusts, or is punctated, and sharply differentiated from the adjoining healthy skin. This form of lupus is undoubtedly developed in the substance of the corium, and occurs upon the cheeks, or upon the bridge of the nose, and occasionally on other parts of the skin of the head, on the palms and palmar surface of the fingers, and on the trunk and arms. It is sometimes accompanied by a remarkable hypertrophy of the sebaceous follicles, with increased discharge of thin secretion, constituting the condition known as seborrhœa congestiva. In regard to the treatment of this affection, Kohn considers that internal remedies, as the preparations of iron, arsenic, iodine, and cod-liver oil, are quite subordinate to appropriate and carefully-applied local remedies. Amongst these the following have proved themselves to be in individual cases a certain and positive means of cure:—1. The spiritus saponatus kalinus of Von Hebra, which is composed of soft soap held in solution in rectified spirits of wine with the addition of a little spirit of lavender, and is to be diligently brushed over the affected part. The scabs separate, blood-drops and serum are exuded, dry up to a crust, and on falling off leave a more or less healthy surface. 2. Liquor potassæ, in the proportion of one drachm of potash to two drachms of distilled water. 3. Liquor ammoniæ. 4. Carbolic, acetic, hydrochloric, chromic, nitric, and sulphuric acids: the acetic being perhaps the best. 5. Iodine, especially in the form of tincture, and combined with iodide of potassium and glycerine. 6. Nitrate of silver. 7. Arsenic paste, in the proportion of five grains to two drachms of simple ointment, and fifteen grains of cinnabar. 8. Chloride of zinc, which he has found to be the most efficacious of all the emplastrum mercuriali.

We regret we have no space to give an abstract of a good paper by Dr. Pick on "Eczema Marginatum."

DAMPNESS OF SOIL AND PHTHISIS.

The highly interesting subject of the connexion between the prevalence of consumption and the wetness of soil in different districts, and the influence of climate on the cure of phthisis, was brought under the notice of the Medical Society of London, at its last meeting, by Dr. Buchanan. It is only within recent years that the material has existed from which to draw the important conclusions that have been so admirably worked out by Dr. Buchanan in this country, and enunciated in great part by Dr. Bowditch in America. The great advance in the method of studying the subject in its relations to the practical question of the treatment of phthisis—for that is the point of special and immediate interest to the practitioner—was made, Dr. Buchanan acknowledged, by Sir James Clark among English physicians; who showed that very satisfactory results were obtained by consumptive invalids selecting well-chosen sites of residence, not only abroad, but in England, the value of climatic treatment being of course best marked in the earlier stages of the disease. Dr. Archibald Smith and Dr. Weber have done much to add to our reliable knowledge on the same point. Dr. Weber also has discussed the whole question of the influence of climate on phthisis in a most philosophical manner, and has shown that elevation seems not to be the only influence; the degree of motion of the atmosphere, the relation of sites to hills or valleys, the degree of exposure to the sun's rays, the aspect, the geological nature of the substratum, the degree of humidity, the frequency of rain, and other conditions on which the dryness or dampness of the soil depends, are to be largely taken into account. Dr. Buchanan, after noticing all these facts, and pointing out that allowance had to be made for many incidental influences before the conditions of scientific induction can be satisfied, and before we can say that a disease owns any given physical state as its cause; and that it was necessary to show that the condition adverse to the production of the disease is also favorable to recovery from it,—proceeded to speak of the influence of dampness of soil in the production of phthisis. In 1865 Dr. Buchanan noticed that certain towns experienced a reduction of their previous death-rates from phthisis, and on inquiry it was seen that this was in proportion to the diminution effected in their surface-water by engineering operations. This was the only constant relation. The case of Salisbury is a remarkable one; it was formerly one of the wettest cities; now it is improved in this respect, and its death-rate from phthisis has diminished 50 per cent., the amount of disease being found to vary with the degree of porosity of the soil on which the inhabitants lived.

The gist of Dr. Buchanan's communication on the present occasion was a therapeutical one—to emphasize the fact that those places which seem to generate little phthisis amongst their own population should be more distinctly regarded as advantageous residences for those of phthisical tendency. An authentic chart of the comparative salubrity of health-resorts for consumptives is unquestionably a desideratum. Hastings stands high on the list of good habitats, but it would be well if more evidence were forthcoming of the effect of quality of soil in restoring phthisical patients who seek residence in different districts.

Another point of positive duty would seem to flow from Dr. Buchanan's observations. It is this: that the practitioner should take care to urge upon families having strong phthisical tendencies, and living in low, flat, damp situations, the necessity of recognising the cause of phthisis here adverted to, and of paying less attention, in the choice of a residence, to convenience, and many considerations which now influence a decision in the matter.

Medical Annotations.

"Ne quid nimis."

SACRIFICES TO BACCHUS.

THANKS to the courtesy of the various house-surgeons, we are enable to present our readers with a very interesting record—the number and nature of the accidents *do to drink* which were treated in the metropolitan hospitals during Boxing day and night. This includes some cases of injury inflicted under the influence of drink, the victim not being intoxicated. All the general hospitals of importance have furnished returns, and as accidents of any severity on such an occasion are with scarcely an exception taken to an hospital, it may be considered that the list fairly represents the amount of serious damage to limb which the festivities of Boxing-day inflicted upon the London population.

From *St. Bartholomew's* Mr. W. D. Butcher, house-surgeon, gives us a list of 46 casualties, 17 of which were severe enough to require admission into the hospital. Out of these in 5 cases the sufferers were not themselves intoxicated, but their injuries were caused by drunken persons. One person under these circumstances got a fracture of the jaw, with cut head and face; another had a wound of brachial artery; whilst "fracture of forearm," "scald on arms," and "scalp wound" represent the other three cases.

At *Guy's* 13 cases are reported by Mr. C. Sells, one only requiring admission.

The *London Hospital* admitted 5 cases, and treated as out-patients 21, due to drink. Mr. Butler Ruttledge, the house-surgeon, tells us that the whole number of accidents treated was 100. One female had both bones of leg broken by a drunken husband; another had her lip bitten by a drunken man.

From *St. Thomas's* comes a list of 13 casualties, including "a severe bite of tongue." Mr. Albert Bell reports 2 cases illustrating the proverbial luck of drunken men. A man was brought in, and found to be uninjured, who had fallen from a hearse; another was struck on the leg by a machine weighing some hundredweights, and escaped with a slight abrasion. These two men "were too drunk to stand when brought to the hospital."

At *University College Hospital* Dr. Squarey, resident medical officer, tells us only 5 cases of the kind were treated.

At *King's College*, on the other hand, no less than 23 casualties are reported by Mr. A. Napper, house-surgeon, as "due to drink."

From the *Middlesex* Mr. G. E. Norton sends us a list of 9 casualties.

Mr. J. K. Kidd tells us that at *Charing-cross* 5 such cases were treated.

At *St. Mary's* 9 casulties from drink were treated by Mr. J. R. Walker.

At the *Westminster* 15 such cases were attended by Mr. J. R. Haynes.

From the *Great Northern* we learn that 4 cases were attended by Mr. P. D. Hopgood, including a serious one of concussion of the brain, produced by a fall from a horse, and a punctured wound from a fall upon a butcher's knife. The latter would probably have been fatal but that the blade, happily, struck against the first false rib.

At the *Royal Free* 13 casualties are ascribed to drink by Mr. T. C. Murphy, the resident medical officer, who tells us that 3 of these were serious enough to require admission.

The total 181 will probably appear small to those who remarked the number of passengers with unsteady gait who filled our pavements. It includes, however, 38 fractures of various bones, fractures of both bones of the leg very largely preponderating, and broken ribs coming next. There were nine dislocations. In 7 instances application was made on account of "retention," and strangely enough 3 of these cases were relieved at one hospital. The radial artery in one case, and the brachial in another, were wounded by glass. Cuts, sprains, bruises, and lacerations complete the catalogue of ills resulting from the mirth of Boxing-day.

LITHOTRITY IN INDIA.

THE prevalence of calculus disorders in certain parts of India is well known, and the operation of lithotomy has, in the hands of both English and native Indian surgeons, proved most satisfactory. It almost excites the envy of ardent surgeons in this country to find their juniors in the Indian service counting their cases by hundreds as compared with their own tens; and we may mention as an instance of the enormous practice of lithotomy which can be readily obtained in India, that an old student of St. Bartholomew's, Mr. Kiernander, recently presented to that institution a collection of ninety calculi removed by himself during a two years' sojourn in that country. Modern progress seems likely, however, to affect the practice of distant countries no less than our own, and the impulse which has been given to lithotrity of late years by Civiale, Fergusson, and Thompson, is beginning to be felt in Bengal. In the September and October numbers of the *Indian Medical Gazette*, Surgeon J. B. Scriven, Principal of the Lahore Medical School, has recorded his experience of lithotrity among natives of India during the last seven years, within which time thirty-three cases have passed under his notice, the majority being under his own care. Mr. Scriven finds that his more recent practice has been more satisfactory than that of former years, owing to his being provided with improved instruments, and especially with the flat-bladed lithotrite recommended by Sir H. Thompson. Of the thirty-three cases, twenty-nine were male patients, ranging in age from twenty-one years to ninety, and of the four females, two were children of five and ten years. Of the twenty-nine male cases, nineteen were cured, one of them having undergone the operation of lithotomy. Of the remaining ten, seven left the hospital of their own accord, four of them being relieved, and three no better; one was discharged, relieved: one was lithotomised, and left the hospital suffering from liver disease; and only one died in the hospital. Of the four female cases, in one lithectasy was performed after lithotrity: one left the hospital before she was wished to do so, but in all the cure eventually was complete. Mr. Scriven has afforded most valuable data by giving brief details of all his cases, and expresses a hope, which we have no doubt will be realised, that other Indian surgeons will provide themselves with the necessary instruments, and study the operation with a view to its more general introduction. Of course one operation cannot be resorted to in all cases, and careful selection must be made as much in India as in this country. In the same number of the *Gazette* in which Mr. Scriven's cases appear, there is recorded by Dr. Harvey, of Bhurtpore, a case of lithotomy, which proved successful after the removal of a mulberry calculus weighing over eight ounces five drachms; and such cases will no doubt from time to time occur, which would be obviously most unfitted for lithotrity. The introduction of a non-cutting operation will doubtless tend to the discovery of stone at an earlier date than is now often done, and thus, in procress of time, lithotrity may become the rule, and lithotomy the exception.

WHOLESALE POISONERS.

A PARAGRAPH, bearing the sensational title of "A Wholesale Poisoner," has been going the round of the papers lately, based upon the confession of a mild Hindoo named Ramadheen, not yet quite twenty-one years old, of his having followed the trade of a poisoner for more than a year and a half, during which time he had managed to poison twenty-seven victims in the neighborhood of the North-western provinces of India. No motive, beyond a love of the exercise of his power and skill, is assigned. We are told by those who have resided in India, that poisoning is a common crime in that country, although not after this wholesale and motiveless fashion. A native servant will inform his master of the death of a fellow servant who was yesterday in good health, with no more concern or explanation of its cause than may be implied by a shrug of the shoulders. Jealousy and envy are the more frequent motives; the number and accessibility of poisonous vegetables supplying the natives with agents. It was not long ago that our invalids, looking forward to their morning papers as a daily source of interest, were treated with the details of a wholesale poisoning of patients by the nurse of a public hospital in France; and the apparently motiveless nature of the crime excited much curiosity. The ways of some men and women are past finding out. The perusal of a criminal case, and the bare love of imitation, with some women of peculiar temperament and morbid state of nervous system, will be sufficient to lead to their attempting the committal of crimes. A suggestion, of insignificant power at first, recurs to the mind, and is dwelt upon until it fairly dominates the will; and our police reports and cheap literature undoubtedly exercise an injurious influence in these respects. In the case of the nurse, we are inclined to agree with a writer in the *Spectator* that something like a morbid desire to exercise power might have influenced her. It certainly could not have been from any love of cruelty, or wish to see suffering, because the agents employed would effect their object with relatively little or no expression of any kind. Such cases are not to be counted among examples of insanity; the fear of detection, or of some sharp punishment, would, doubtless, have controlled the criminals, if such fear had really been present to them.

SEWING MACHINES A CAUSE OF UTERINE DISORDERS.

ABOUT the end of 1867, M. Guibout, physician to the Hôpital St. Louis of Paris, published a series of observations, in which he mentioned the results of his experience touching the inconveniences of sewing machines. Several females had presented themselves in the out-patient department of his nosocomial service, and had complained of various uterine ailments, which he could plainly refer to the use of sewing machines. These inconveniences have lately been brought to light in another scientific quarter; and thus M. Guibout's observations have acquired an additional authority. At a recent meeting of the Obstetrical Society of New York, several members stated the results of their practice in connexion with this subject. Dr. Chamberlain referred a case of enlargement and prolapsus of the right ovary, then under his care, to the employment of a sewing machine. Dr. Perry mentioned one or two cases of severe uterine disease, in one of which death occurred. Dr. Peasley referred to a patient under his care who had made use of one of these machines, and who afterwards became forewoman of an establishment where fifty women and girls operated. "She stated," says the *New York Medical Record*, "that a majority of the girls suffered from dysmenorrhœa and leucorrhœa. During the catamenial flow, in consequence of the great derangement of the menstrual function, they were obliged to absent themselves from work. It will not be forgotten that M. Guibout had observed that the motion of the limbs in working the machines occasions a sexual excitement, and may bring on great feebleness and enervation in women.

BROMIDE OF POTASSIUM IN THE NURSERY.

SCARCELY any modern remedy has enjoyed such favor among practitioners and been the subject of such extensive research, as bromide of potassium. Its effects have been vaunted in a considerable number of maladies where it is necessary to exert a sedative action upon the nervous system—for instance, epilepsy, croup, headache, &c. M. Moutard-Martin, a nosocomial physician of Paris, now informs us that it has proved a most useful remedy in his hands for combating certain infantile diseases, and has been of special service in producing a condition of tranquility in children who are much agitated by disease, and in procuring rest to infants who are deprived of sleep. The suffering which some children undergo from want of sleep, even when not otherwise ill, and the distress to which they put their nurses or parents, are so great that any remedy having, like the one in question, the property of inducing needful repose must be most welcome both to practitioners and parents. M. Moutard-Martin states that when every other remedy—such as the warm bath, orange-flower water, and the infusion of cherry—has failed in such cases, the bromide of potassium has given the most remarkable results. There are also other cases in which its employment is very valuable in infantile therapeutics. The nervous erythism which attends dentition, and which manifests itself by a condition of excitement, cough, and sleeplessness, is often abated by the employment of the medicament; and M. Moutard-Martin is confident that its timely and proper use may even ward off attacks of convulsions. In many cases its action is very prompt and decisive. It should be administered to very young children in weak doses of from five to twenty centigrammes, and should be withheld in cases of diarrhœa.

"LOSING CARDS."

Amongst the occupations which almost necessarily entail damage to health, a notably dangerous one is the enamelling of the backs of playing cards. When we are intent upon our "quiet rubber," and express a preference, perhaps, for the green pack as representing the "winning cards," we are apt to forget that their brilliant color is due to a combination of arsenic with copper. The unfortunate artisan, however, who colors them has bitter cause to remember the fact in the injury received, especially by his eyes and nostrils. He knows, too—his palsied hands will often teach him,—that the smooth glaze which makes the cards so easy to shuffle depends upon a coating of white lead. Toy- and doll-makers run similar risks. We have been appealed to on behalf of those following noxious trades, whose case seems, indeed, to be a hard one. Men so occupied are frequently excluded from the benefits of sick-clubs by reason of the deadly nature of their work, and so, however ill they may be, they have to work on as best they can, or the wife and little ones would starve. Of course it is very imprudent of persons to engage in such deleterious occupations; but everyone knows that, so long as there is a demand for this kind of work, men will be found to undertake it. The processes, however, which are followed, are often rude and capable of great improvement—at least in respect of the hazard to health which is incurred,—and the State might usefully insist upon medical inspection of the workshops, with a view of reducing this risk to a minimum.

REMOVAL OF THE ENTIRE TONGUE.

On the 20th of November the entire tongue was excised by Dr. Fenwick, at Montreal, for epithelial cancer. The operation performed was that described by Mr. Nunneley of Leeds. Entering the mouth from the floor, cutting midway between the chin and hyoid bone, between the genio-hyoid muscles, through the opening thus made Dr. Fenwick passed the chain of one of Chassaignac's écraseurs, which was carried back to within a few lines of the epiglottis. He was ably assisted by Dr. G. W. Campbell, Professor of Surgery in McGill College, who drew the tongue forcibly out of the mouth by means of a strong cord which had been previously passed through its substance. Ablation was accomplished in nine minutes. Up to the departure of the mail on the 27th, the patient was doing well, the stump granulating kindly; he could drink freely, and even articulate, though in a husky tone. Not a single unfavorable symptom had occurred since the operation. We may observe that although excision of the tongue has been practised in Jamaica by Dr. Fiddes, this is the first occasion of its performance in Canada, by a gentleman, too, who was the first to excise the knee-joint in the same part of her Majesty's dominions.

TRIFLING WITH CHLOROFORM.

Another case of death produced by the self-administration of chloroform for the relief of pain has been reported in the daily papers. It has now happened that persons have inhaled chloroform after having laid themselves down in bed, and have died, not from the direct effects of the anæsthetic, but from suffocation, due to the position assumed during anæsthesia. It cannot be too strongly impressed upon the public that the self-use of chloroform must always be highly dangerous, and can scarcely ever be justifiable. We fear that a custom has sprung up of permitting patients laboring under painful diseases of a remittent kind to take chloroform when paroxysms occur; and we would strongly urge that the dangers of such a practice are too great to be incurred on account of any considerations of convenience.

On Tuesday last the thirty-fifth session of the Scientific Congress of France was opened at Montpellier. The programme is most extensive, and includes some interesting questions. But it is to be feared that there will be too much of a good thing, and that the considerable number of subjects to be discussed will produce the same result as at the International Medical Congress of Paris. In order to get through the programme an inconsiderate haste will be manifested; some of the more interesting questions will not be sufficiently ventilated, and others yet more interesting will necessarily be set aside for want of time. Indeed the question may be put whether a formal and binding programme should be enforced at any kind of Congress; or whether a very few questions, discussed with care, and in a practical manner—namely, by short pithy remarks,—would not be better than all the trash and interminable reading which are produced in the French Congresses.

NITROUS OXIDE AS AN ANÆSTHETIC.

At the meeting of the Odontological Society held in December last, Mr. Harrison, the Chairman, read a preliminary report of the Committee appointed to investigate the merits of nitrous oxide as an anæsthetic. After alluding to the circumstances which called the Committee into existence—viz., the exhibition of the gas as an anæsthetic by Dr. Evans, in London, in March last, and his donation of £100 for furthering inquiries upon the subject, the report went on to state that the Committee first performed a large number of experiments upon the lower animals, and then cautiously administered it as an anæsthetic at the Dental and other hospitals, as well as in their own individual practices. The results of their experience thus obtained led them to believe that the agent was, for short operations, as efficient an anæsthetic as any known, and that as far as they were able, from their limited experience—viz., those experiments upon the lower animals, and the recorded statistics of rather more than 2000 administrations—to judge, it was at least as safe as any other at present in use. In no case had any symptoms arisen of an alarming character. In speaking of the advantages protoxide of nitrogen possessed over other anæsthetics, the following were enumerated: rapidity of effects, rapidity of recovery; patients could usually walk, speak correctly, and write with a steady hand within four minutes from the period the anæsthesia was commenced. It was more rarely followed by disagreeable effects; headache and giddiness were rare, and vomiting occurred in under one per cent. of the cases tabulated, and arose in most instances from blood swallowed.

On the other hand, the following disadvantages were mentioned. Its unsuitability for long operations, owing to the transient effects of the gas; and, for the same reason, in cases where, after a severe operation, the smarting and pain would with a more continuous agent be less immediately felt. Other disadvantages named were the expense and the difficulty of preparing as well as of transporting the gas, the more complicated apparatus necessary for the administration of the same, and the greater precautions necessary to ensure certainty in its effects; many of these latter, the Committee felt, would no doubt be soon overcome should the anæsthetic come into more general use.

The Report gave full statistics of 1380 administrations tabulated, the number of each sex and of children, the average time of producing anæsthesia, of anæsthesia and of recovery in each; the number of times it had been given consecutively to a patient at one sitting—viz., six times.

The Committee recommended, after pointing out the symptoms which would probably indicate danger, that the agent should be at once removed, and air freely admitted. In case this should fail to cause free respiration, that artificial respiration should at once be resorted to, their experience upon this head having been obtained from their experiments upon the lower animals.

Were there any cases in which this agent was contra-indicated? It had been given to women far advanced in pregnancy, to persons suffering from phthisis, asthma, and some other affections of the lungs, as well as in cases where, from well-marked arcus senilis and other symptoms, there was every reason to suspect fatty degeneration of the heart. In none of them had there been any symptoms to cause alarm; but of course the agent had been administered in such cases with more than ordinary precaution.

As this was but a preliminary report, the Committee refrained from entering upon the question of the physiological action of the gas, and some others, which they hoped to be able to work out before long, and present to the members of the Odontological Society and the profession at large in their final report. The mode of preparing the gas as recommended by the Committee was described at length, and during the reading of the paper the supply for the next day at the Dental Hospital was generated on the table, and appeared to require hardly any superintendence. The modes of storing the gas, in gasometers, compressed in wrought-iron bottles, as done by Mr. Barth, or condensed into the liquid form in aluminium bronze vessels, as carried out by Dr. Evans, were explained, and the advantage of each commented upon.

Mr. Norton spoke of the physiological action of the gas. He believed it asphyxiated the patient, as did carbonic acid gas.

Mr. Sewell supported the views expressed by Mr. Norton.

Dr. Sanderson differed from the last speakers. The action of nitrous oxide did not produce a condition similar to apnœa. In his experiments on animals he had carefully compared the conditions in each case, registering the respirations and pulsations by the same instrument, and great differences were manifested in the two cases. He expressed himself much pleased with the report, and the fair way in which the Committee had treated the question.

Dr. Marcet fully agreed with Dr. Sanderson that the action of nitrous oxide gas was not that of producing apnœa. He believed it was decomposed in the lungs, and explained upon this hypothesis the various phenomena he had witnessed during its administration.

Mr. Coleman felt much hesitation in differing from so great an authority upon physiological chemistry as Dr. Marcet. At the same time he must express his belief that nitrous oxide gas was not decomposed in the blood, and gave chemical and physiological facts in proof of the same. He concluded by stating that practically he endorsed his views by administering the same gas over and over again, providing for the removal of the carbonic acid gas given off from the lungs.

Mr. Cattlin gave some account of his experiments upon the lower animals. In one case a pig was experimented upon. It was found insensible to pain, but it was by apnœa; for, owing to a mistake, the supply of nitrous oxide had been cut off, and the pig got neither gas nor air.

Mr. Clover described his ingenious apparatus for administering the gas, and keeping up its effects in dental operations by admitting it through the nose.

Mr. Braine, on behalf of the Committee, mentioned that the gas had been administered to a child of a year old, and to a woman of seventy-five: these were the two extremes contained in the statistics he had worked out.

Mr. Haynes Walton asked for some fuller information than that contained in the report respecting its use in surgical operations. The report had confined itself chiefly to dental operations.

Mr. C. J. Fox narrated a case in which he had administered it for twenty minutes, when the female breast was removed by Mr. Carr Jackson.

Mr. Rendall, Mr. Coleman, and Mr. Clover also reported surgical cases of five and six minutes' duration.

A gentleman reminded the meeting of the fact that they possessed local anæsthesia. He had removed a breast to which ice and salt had been employed without any severe pain being felt, and alluded to Dr. Richardson's valuable introduction, the ether spray.

Mr. Portor (of Messrs. J. Bell and Co.'s), at the request of the President, described a very ingenious plan he had devised for regulating the temperature in producing nitrous oxide gas. As the temperature, and consequently pressure, increased, water was forced up a tube, raising therein a float, which acted upon a lever, and so shut off gradually the supply of gas. The gas was never extinguished; but if it required being safely shut off, or if the bag employed to collect the gas, or gasometer, were filled, a shrill whistle was blown to give alarm.

After a few remarks from the President, the meeting, which was a very crowded one, broke up.

Foreign Gleanings.

TREATMENT OF CATARACT BY PHOSPHORUS.

M. Tavignot, a well-known and much esteemed Parisian oculist, has lately published, in the *France Médicale*, a series of cases which would go far to prove that frictions on the forehead with phosphorated oil, and instillations of the same into the eye, may contribute to the melting away of the hardened lens or capsule, and the restoration of sight, without the usual operation. These cases are worthy of attention, and should be read by all those who take an interest in ophthalmology.

CRIES OF A FŒTUS IN UTERO.

The *Scalpel* states that Dr. Dubreuilh, of Bordeaux, had under his care a girl of sixteen, who, towards the end of gestation, was seized with eclampsia. Chloroform was used, and a very small male child extracted. The breech of a second child now presented, and, just as the waters broke, the persons present heard the cries of the child, as if they issued out of a box, and they continued until the delivery was effected by the feet. The cries were heard at the moment when the accoucheur pushed up the breech to seize the feet. Air had probably then penetrated into the uterus, which was not quite filled by the second fœtus, and the latter, having inspired it, began to cry.

AMPUTATION OF THE LEG ABOVE THE MALLEOLI.

Dr. Guyon brought, on the 12th of August last, a patient before the Surgical Society of Paris with a good stump. The surgeon makes an incision in front, three fingers' breadth above the malleolus, with the *concavity* downwards, and the incision is continued along the inner part of the leg, in the direction of the malleolar axis. When the knife has reached the upper extremity of the malleolus, the incision is carried in a slightly oblique direction, until it reaches the level of the sole of the foot at the lower extremity of the os calcis. The surgeon then re-ascends with his knife, on the outer side of the leg, to the point where the incision began. An elliptical cut is thus obtained. The tendo Achillis should then be separated from the calcaneum, the lateral tendons cut, and the flap may be detached up to the line of the first incision. The muscles of the anterior part of the leg are lastly cut through, and the bones sawn as usual. In the flap, which is thick and broad, is the tendo Achillis within its sheath, and the posterior tibial artery. The stump has turned out, after seven weeks, firm, regular, and well cushioned, the cicatrix being on the front of the leg.

BLISTERS IN CHILDREN.

Dr. Botti states, in *L'Imparziale* of Florence, December 19th, 1868, that he ordered two small blisters for the front of the chest of a child eighteen months old, suffering from severe bronchitis. Unfortunately the two blisters were placed too close to one another (it is not said how long they were left), and a deep ulceration was the consequence. Soothing poultices did not prevent the formation of sloughs; and these, on being cast off, were replaced by others, which adhered like diphtheritic false membranes. The ulceration, in spite of adequate treatment, went on extending, the child lost its strength, and soon died exhausted.

News Items, Medical Facts, &c.

Anniversary Meeting of the Academy of Medicine of Paris.—This meeting, which takes place every year in December, is looked forward to by the numerous phalanx of scientific workers who burn the midnight oil in the hope of carrying of a prize. Every year also it is the custom to offer the panegyric of some departed member of the learned body; and as M. Béclard, the secretary, had taken Velpeau as his subject, a good deal of interest was excited among the medical public. The meeting turned out very brilliant, especially as numerous ladies were present (a very questionable addition), and the report of M. Dubois, the permanent secretary, on the prizes was listened to with great attention. In many cases no prize was awarded, but sums of money were granted as encouragement. Finally came the much-talked-of discourse on Velpeau, in which M. Béclard succeeded in giving an animated, and somewhat kindly, sketch of the great departed surgeon, who, from the humble condition of a farrier's journeyman, rose by dint of undaunted perseverance to the professional pinnacle of the French capital. Velpeau never relaxed in hard work; he was not spoiled by success, but labored incessantly to the last hour. He never would grant that he felt ill, and no one was acquainted with his state of health; he always smiled at any condolence, and jocosely said (he was very fond of a joke), "I shall be downright dead before I confess that I am gone." Writing, public speaking, and clinical teaching were his forte; and though a sound surgeon, he was far from being a showy, operator. His reputation was European; but the French practitioners, dazzled by the new surgical star in the person of Nélaton, were far from requesting his opinion so often, within the last few years, as had been their wont of old. Velpeau died very rich, commanding the respect of several generations of pupils, and offering a bright example to those who place their reliance in persevering industry. M. Béclard's discourse was a real panegyric; actual surgical disquisitions did not abound in it, and, though the orator showed some impartiality, he could have shown more had his biographical sketch been put off for a few years.

Central Perforation of the Perineum: Passage of the whole Fœtus through the Rent.—Professor Stolz, of Strasburg, has communicated this case to the Surgical Society of Paris. So rare are these cases that the Professor has seen only one example during a practice of forty years. The patient, aged twenty-seven, had severe pains, and when the head was on the point of passing the vulva, it retracted. A pupil midwife was supporting the perineum when the head suddenly passed through the latter, and so rapidly that the whole child was born through the abnormal aperture. The child measured about seventeen inches, and weighed almost seven pounds. The rent was two and a half inches long. The fourchette was entire, and the internal sphincter also. The constrictor vaginæ was torn posteriorly, and likewise the inferior third of the vagina, with the corresponding recto-vaginal parietes. Some gangrene occurred, but on the twelfth day the wound looked well, and was contracting. On the thirtieth day the wound was getting smaller; the woman left the hospital, and was not heard of until one year after the accident (the summer of 1865), when she came to complain of procidentia uteri. The aperture was still visible, and somewhat occluded by the neck of the uterus. At that period the patient again disappeared, and the account of the case closes thus unsatisfactorily. How the woman was allowed to leave the hospital with the rent gaping, when it might have been so easily sewn up, can hardly be understood, unless she positively refused an operation. This supposition seems near the truth, as it is not said how, When she came a year afterwards, the hole was not proposed to be closed by sutures, and the uterus replaced.

Voltolini's Laryngoscopy without Mirror.—This physician has published an article in the *Berlin. Med. Woch.*, wherein he shows that the epiglottis and the interior of the thyroid body can be seen and acted upon, without mirror, in the following manner:—Do *not* press down the tongue with a spatula, which measure is likely to obscure the parts, but hold the tongue firmly out of the mouth; push up the thyroid cartilage externally with the fingers of the hand which keeps the tongue steady, and with a little appropriate instrument press the epiglottis forwards. The author maintains that in this wise he saw the thyroid cartilage, and thinks that, with a proper patient, the interior of the thyroid body could be explored. Dr. Voltolini alludes to a case of a gentleman, aged fifty-six, in which Dr. Middeldorpf, who had requested the author's assistance, succeeded in removing a polypus, the size of half a pigeon's egg, from the walls of the pharynx, by means of the galvanic wire.

The Paris School for the Higher Branches of Physical and Natural Sciences.—This school, which has lately been founded by the French Government for the cultivation of the higher branches of science, is intended for men who may be found sufficiently qualified to carry on investiga[illegible]nd researches. Every facility and assistance will be [illegible] to the pupils by the eminent professors attached [illegible]ch section of the school. The laboratories are situated [illegible]her at the School of Medicine at the Collège de France, [illegible] the Faculty of Sciences, or at the Natural History Museum. The *élite* of the Paris professors have been appointed to the different sections, which comprise physics, chemistry, mineralogy, geology, botany, anatomical and physiological zoology, histology, and experimental physiology.

A Noble Example.—M. Victor Hugo has given his annual Christmas fête to the poor children in Guernsey. This year the warm-hearted exile was able to congratulate himself that his original idea of providing for the destitute little ones has fructified to such an extent that more than 120,000 children were assisted during the year just closed. M. Hugo concluded an impressive address to his visitors in these words:—"Whatever may be the sorrows of life I shall not murmur at them if I am permitted to realise the two highest objects of ambition that a [illegible] These objects are to be a slave—to be a servant; to be the slave of conscience—to be the servant of the poor."

The Stains of Iodine.—Add a few drops of liquid carbolic acid to the iodine tincture, and the latter will not stain. Dr. Bogs, of the Indian Service, states that the carbolic acid, besides the above-mentioned property, renders the efficacy of tincture of iodine more certain. Whenever injections of the latter are indicated, he advises the following formula:—Alcoholic tincture of iodine, one ounce (this proportion is mentioned by the *France Médicale*, but there is evidently a mistake,—instead of "30 grammes" it should probably be "3 grammes,"—viz., 45 drops); pure liquid carbolic acid, six drops; glycerine, one ounce; distilled water, five ounces. This is said to be far superior to tar-water in blenorrhœa and leucorrhœa.

The Glasgow Medical Missionary Society, which associates the healing of the body with the healing of the soul, has just held its first annual meeting, under the presidency of Dr. Andrew Anderson. A dispensary for the gratuitous supply of advice and medicine, under the direction of a medical superintendent, and a "bible-woman" for the administration of spiritual comfort, has been established and supported by the society, which appears to have so well managed its financial affairs as that its income has exceeded its expenditure.

The Late Professor Trousseau.—The marble bust of this eminent and much regretted physician has just been placed in one of the large rooms of the Faculty. The likeness is excellent, the artist having succeeded in reproducing the handsome and noble features of the departed. The bust rests on an elegant pedestal, upon which is engraved, "By Subscription." A bronze copy has been ordered by Professor Lasègue, which is to be presented to the Hôtel Dieu.

Dr. Trench has suggested to the Liverpool Corporation that they would be doing a greater sanitary work than they have hitherto accomplished if they would fill up the cellars which many of the poorer classes now inhabit, so as to prevent them from any longer living underground, where it is quite impossible they can be healthy. The Corporation has now ready for occupation part of the buildings erected for the accomodation of the working classes of Liverpool.

Death of Professor Palamidessi.—On the 27th November last, this highly-gifted surgeon died in Florence, after five months' severe illness, having hardly reached his fiftieth year. As professor of Surgery at the Hospital of Santa Maria Nuova, and as a brilliant operator, the deceased was a great favorite among the students, and highly valued by the profession. M. Palamidessi's funeral was attended by a great concourse of friends and admirers, and the most eloquent and touching discourses were delivered over his grave.

At a large tea party held lately at Wolverhampton, in honor of a local celebrity, yclept "Fiddler Joss," the unpleasant discovery was made that the water was strongly impregnated with what seemed to be copperas. It has, however, been ascertained that the well from which the water was taken had been contaminated by the vitriol from some neighboring works.

The curate who had performed the Cæsarean operation in Belgium upon a woman who had just died, and who had condemned for the act to one month's imprisonment, has made an appeal to the Court of Cassation. The case will shortly be tried.

PRINTED AND PUBLISHED BY
WM. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 4. NEW YORK, APRIL, 1869.

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.,

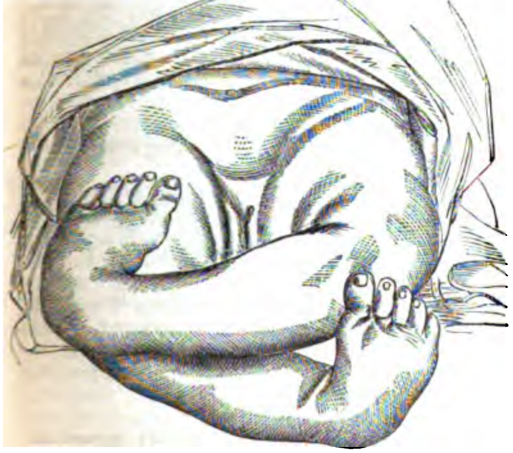
Lecturer on Orthopædic Surgery at the Hospital.

LECTURE V.

ON CONTRACTIONS OF THE LIMBS.

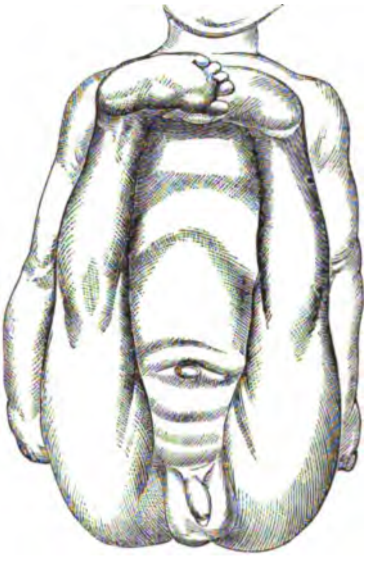
Congenital contractions of the knee and hip are rare; yet there are found, together with congenital distortions of the feet, retraction of the flexor muscles of the leg, as well as of those of the thigh. Usually both limbs are together affected, and in a similar manner, as in the case now before you. In this instance there is double talipes varus, and both knees are contracted at right angles. (Fig. 15.) But although it is the rule that both knees or both hips shall be contracted, exceptions occur. Such an instance lately came under the care of my colleague, Mr. Adams, where, together with talipes varus of the left foot, there was also congenital contraction of the flexors of the leg, and this was so great that the distorted foot was drawn up almost to the pubes, and was habitually placed at the top of the opposite thigh, on the front of which it lay. The other leg was in a perfectly normal and well developed condition.

Fig. 15.



Again, you will remember to have seen in Drummond ward a case of contraction of the flexor muscles of the thigh, through which the lower limbs were laid flat upon the trunk, while the feet, which were contracted in a severe form of talipes varus, as I believe is always the case in these distortions, were crossed below the chin. The case is well represented in Fig. 16. The child was brought here from the Belgrave Children's Hospital by Mr. Pick's permission. Not only are the flexors of the thighs and the adductors and extensors of the feet retracted, but also the extensors of the legs, so that the knees remain stiff and immovable. I have never seen or heard of a case of equal severity. Slighter cases have come

Fig. 16.



under my care, and in these also there has been talipes varus and retraction of the extensors of the legs.

Non-congenital contraction of the knee and hip.—It has already been stated that these contractions are occasioned by spastic rigidity through spinal irritation; that they arise from injury to a portion of the nervous system through which paralysis is induced; or that they result from inflammation of the structures which enter into the formation of the limb, by which muscular retraction through irritation is occasioned, or otherwise contraction is induced by inflammatory adhesion. Thus there are three pathological conditions which especially demand attention when treating of contractions of the limbs—namely, spastic rigidity, paralysis, and the result of local inflammation.

The muscles of the lower limbs which are especially affected with spastic rigidity are the flexors and the adductors of the thighs, the flexors of the legs, and the extensors of the feet. Cases are, however, occasionally met with—such as that to which I alluded in my first lecture, and which is portrayed in Fig. 1—where not only a limb, but the entire trunk and extremities, appear to be permanently affected with rigid spasm. In the case now alluded to, the rigidity continued after death. The cast, which was taken after death, shows how unchangeably the limbs were fixed in their distorted positions. Every limb was more or less contracted, whether the upper or the lower extremities; and not the limbs only, but the trunk also. The spine was curved as you rarely see a spine curved; and, further, there was wry-neck and strabismus. Less severe cases than this are, of course, more common; and it is not uncommon to find in young children spastic contraction of the adductors of the thighs, with slight flexion of the thighs and legs, and extension of the feet. Such children also suffer from weakness of the muscles of the back and neck; so that the head rolls from side to side, or falls backwards or forwards, and they cannot sit or stand upright. The hands also are wanting in power. Perhaps, however, the slightest and most frequent form in which this affection presents itself is slight talipes equinus or equino-varus, together with weakness of the fingers of the same side.

Congenital contractions of the toes are sometimes hereditary. I know a family in which for three generations every member has been born with contraction of the second toe of each foot. Contraction occurs much more frequently, however, as a non-congenital affection, and for the most part through wearing tight boots. From this cause one or more toes may be contracted, or even they may be doubled under the sole of the foot, and be almost hidden from view.

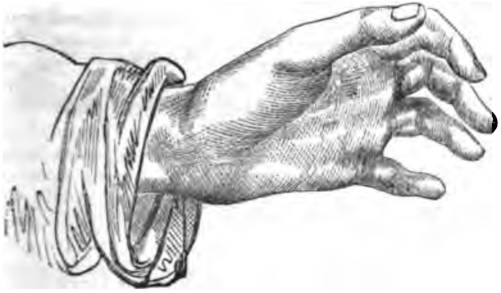
In a general hospital it is more common to see contraction of a limb as a result of local inflammation than from the causes above mentioned. No period of life is exempt from inflammation of the joints; but there are many varieties of articular inflammation, and the liability to suffer from these several varieties is not alike at all ages. Thus childhood is particularly obnoxious to strumous diseases; but primary synovial inflammations are comparatively rare at this period. In the adult, however, inflammation of the synovial membranes is the rule. No joint occasions more trouble than the knee when it becomes inflamed; it is less painful than the hip, its capsule being less resisting, but, on account of its large and complicated synovial surface, it is more liable to inflammatory action than any other joint, and the effects of inflammation are very frequently disastrous. The synovial secretion is poured out in increased quantity, and is of a more aqueous quality than in health, causing great distension of the capsule, and extension of the ligaments of the joint. The limb is at this time flexed; for this position allows of the greatest amount of distension of the joints with the least pain. The ligaments become softened and extended; and as the fluid in the joint is absorbed, the head of the tibia undergoes displacement backwards. This was the course of the disease in the case of Brewster M——, who lately left Fitzwilliam ward. He was admitted with a contracted knee, the result of inflammation about the joint. Abscess had formed, and a portion of the head of the tibia had necrosed. This portion of bone was lying loose in the ham, and having been removed, the wound closed. The flexor tendons were then divided, and the leg was gradually extended, and the head of the tibia restored to its normal position, or nearly so.

Occasionally, contraction of the flexor muscles of the leg causes excruciating pain, and especially is this the case when there is commencing ulceration. Some years since I saw, together with Sir Benjamin Brodie and Dr. Metcalfe Babington, such a case. I allude to it, for I never before or since saw an instance of such powerful contraction of the flexors of the leg, attended with such acute pain. Pain was great and incessant, and so severe that this patient was anxious to lose his limb. Every night he swallowed half an ounce of tincture of opium at a dose, and frequently he repeated it, for it never secured for him more than one hour's rest. It was determined in consultation to divide the flexors, and gradually to extend the limb. So soon as the tendons were divided, pain immediately ceased, and in half an hour our patient was asleep, and without the help of opium. There was no recurrence of pain. In the course of six weeks or two months he began again to use his leg.

Contractions of the upper extremity.—In the same manner as that already described, there is also found flexion of the forearm upon the arm, through retraction of the biceps and the brachialis anticus; of the wrist, through retraction of the flexores carpi; and of the fingers, through retraction of their flexors. But of all the various forms of contraction of the upper extremity, none are more interesting and of so frequent occurrence as those of the hand.

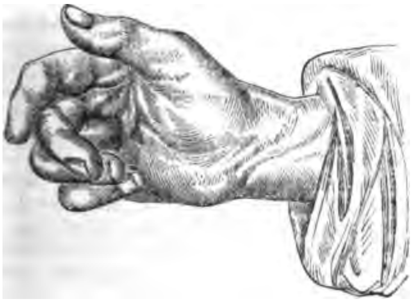
Congenital contractions of the fingers and hand are occasioned by thickening and a contracted condition of those portions of the palmar fascia which pass to the first and second phalanges, and which are attached to the ligaments of the articulation between these phalanges. The little finger is very commonly alone contracted. This may seem to be only a trifling affection. It occasions, however, considerable inconvenience; for the fingers cannot be fully expanded, and, consequently, among other things, the performance of instrumental music is seriously interfered with. Occasionally, however, cases are met with where not only accomplishments are interfered with, but where the fingers are so much contracted that the ordinary avocations of life cannot be fulfilled. Such is the case with a girl (E. B——) at this time in Wright's ward, in whom all the fingers of both hands are more or less affected. The second phalanx is, in this instance, bent upon the first. (Fig. 17.) It is a congenital affection; and it renders this patient so helpless that she cannot gain her livelihood. In this case there is contraction more or less of all the soft structures, as well as of the flexor muscles themselves.

FIG. 17.



Non-congenital contraction of the fingers and hand arises, for the most part, in a gouty or a rheumatic diathesis, and especially where spirituous liquors are habitually taken in considerable quantities. Yet, even with this foundation, there is usually some inciting cause to produce contraction—some local irritation, together, perhaps, with exposure to cold and damp. The cabman's whip and reins, for instance, appear to act frequently as causes of this common form of contraction. It may also be produced by handling a sword, by wearing a ring, or by pressure in the palm of the hand, such as is produced by the carpenter's or the jeweller's tools, or by leaning heavily on a stick or a crutch. In these cases the fascia in the palm of the hand undergoes chronic thickening. It is a painless affection, and its course is very slow. Contraction for the most part, commences in that portion of the fascia which passes to the little finger, and this finger becomes somewhat flexed into the palm; and subsequently the ring, middle, and index fingers, and very rarely also the thumb, become more or less drawn down towards the palm, and they cannot be extended. This affection is well shown in Fig. 18. The process of fascia which passes to each contracted finger becomes more and more dense as the finger becomes more contracted; and occasionally instances are seen where the fingers are so firmly closed that it is difficult to introduce the knife beneath the band of fascia, and even where the pressure of the nail excoriates the palm.

FIG. 18.



The *treatment* of these several affections varies as the pathological condition varies. Thus, as has been already explained, in spasmodic contractions, recourse can be had to section of tendons only when irritation has entirely or in great measure subsided; for contractions would necessarily recur if tendons were to be divided at an earlier period. Until this time has arrived, counter-irritants in the course of the spine may be employed, and nutrition should be promoted to the utmost. When irritation has ceased, the tendons of those muscles which remain permanently shortened may be divided. Among others, those of the flexor muscles of the leg—namely, the biceps, the semimembranosus and the semitendinosus—require to be divided, as well perhaps as the tendo Achillis. As an illustration of the condition to which I am now referring, I will mention to you the case of Mary W——, in Drummond ward.

This child was sent up to the hospital from Blackpole by Dr. Risk, suffering from contraction of the extensors of the feet, and of the flexors of the thighs and legs and the adductors of the thighs. In consequence of this state of the muscles, the trunk was thrown forward, so that the child could not stand without help. After some weeks of treatment, however, and after the flexors of the legs and the extensors of the feet had been divided, and mechanical means had been employed to overcome the other contractions, the child walked fairly in the ward with the aid of a stick. The change which was produced in the form of this child, from a crouching to an upright position, was so remarkable that it might well be doubted if its mother would recognise her child. There was also a severe form of strabismus. The internal rectus was divided by Mr. Power, and the removal of the squint tended much to improve the child's appearance.

As a result of infantile and other forms of paralysis, when structural shortening has taken place, tendons also require to be divided, as in the instance just cited. The result of operation in these cases is not, however, so favorable as in the former: more or less muscular weakness of the limb generally remains, notwithstanding the application of galvanism, excitants, &c.; so that mechanical support is required for a lengthened period after the operation. Where spasm has occasioned contraction, mechanical support also is required to be worn for some time; but in these cases it may be discontinued earlier, as the muscles recover power and resume their functions.

Both in spasmodic and in paralytic affections, distortion may be prevented by the timely use of adequate mechanical means. It is only, for the most part, when such means are neglected that contraction and structural shortening and deformities result.

When the flexor tendons have been divided, extension should be slowly made until it is complete.

When contraction of the thigh, through inflammation of or around the hip-joint, or other cause, has taken place, it is seldom necessary to use the knife. These contractions are overcome so perfectly by means of instruments for extension, that it is superfluous for the most part to divide either muscle or other resisting structure. Occasionally, however, a band of fascia may require to be divided, or perhaps the tensor vaginæ femoris. It is rare indeed, however, that this is necessary. I have also divided more than once the adductor longus, as well as the sartorius, which appeared to influence a limb injuriously; but I don't think that these operations have eventually benefited the patient, and I should not be disposed to repeat them.

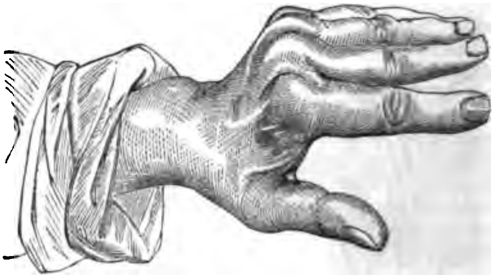
Again, in contractions of the forearm, mechanical means are for the most part sufficient to overcome contraction. It is occasionally necessary, however, to divide the tendon of the biceps. When this is much contracted, it is raised considerably above the vessels, and may be divided without danger. And after the biceps tendon has been divided, the brachialis anticus, and the other contracted structures, yield readily to extension. Contractions of the wrist-joint also generally yield to mechanical means, when there is not any displacement of the bones of the carpus. When the hand is displaced backwards or forwards, it may be necessary to divide the flexor tendons before the articular surfaces can be placed in apposition. I will refer you to Eliz. C——, in Princess's ward, as an illustration in point.

When one or more toes are contracted in children, gentle bandaging will generally remove this deformity; but in later years, when the flexor tendon is rigid, it is necessary to divide it. In the adult, it is impossible to remove a well-marked deformity of this kind without dividing the flexor tendon. The tendon should be divided opposite to the first phalanx, and the puncture having healed, extension may be made very gradually. And in a similar manner the extensor tendon may require to be divided. This is much more rarely required however, and when it is done extension should be made more slowly, for the resistance is less. Even now-a-days we hear constantly of proposals to amputate toes which happen to be contracted, and especially the little toe; for there is supposed to be some special difficulty in restoring the little toe to its normal position, and consequently it is suggested, and with truth, that to amputate the toe is the shortest way of removing deformity. It should be remembered, also, that this short method of cure irrevocably maims the foot. I feel sure that I need not say here that amputation of a toe should not be thought of where it is not absolutely necessary. Nothing is easier than to restore the position and action of toes thus circumstanced by dividing the flexor or the extensor tendon, as the case may be, and by using subsequently gradual extension.

In contraction of the palmar fascia, mechanical extension will sometimes be sufficient to remove the distortion. In general, however, extension is exceedingly painful, and cannot be borne. Recourse should then be had to division of each contracted portion of fascia. So soon as the punctures have healed, extension may commence, and be carried on as rapidly as it can be borne. The palm of the hand and the fingers must then be fully unfolded; for should any contracted portions of fascia remain, the fingers will again in time be drawn into the palm of the hand.

Having shown you a case of congenital contraction of the fingers, and also another of non-congenital contraction, I now show you a third case, in which contraction is caused by chronic rheumatic inflammation of the hand. (Fig. 19.)

FIG. 19.



I show you this case without further comment, and merely for the sake of distinction; for, although there is contraction here, there is no analogy between this and the other forms of distortion. In the former there is simply contraction of the soft textures. In some instances the tissues external to the flexor tendons are alone affected, while in others the flexor muscles are retracted, as well as the fascia and other soft tissues; but in this last case to which I draw your attention, there is disease of the articular surfaces.

Clinical Lecture

ON THE

TREATMENT OF CARBUNCLE.

BY JAMES PAGET, D.C.L., F.R.S.,

Surgeon to St. Bartholomew's Hospital.

(Shorthand Report, revised by the Author.)

GENTLEMEN,—You have recently had the opportunity of seeing four cases of carbuncle treated in my wards after methods which you would probably describe, if asked to do so, by saying that "nothing was done for them." Here are the patient's papers; and there is, to be sure, no medicine set down for them to take, and you know that no surgery was inflicted on them,—and yet a good deal was done for them, though the treatment was what does commonly pass by the name of "doing nothing." They were carefully fed, washed, cleaned, and bedded; and their carbuncles were very skilfully dressed and washed with proper things, and every care was taken to shut out all untoward influences from them. And if any complication in their cases had arisen, these would have been immediately met. But no complications occurred; and, therefore, the cases passed through their course without treatment, as it is said—that is, without medicine, and with no surgery, no active surgery, no incisions or anything of that kind. And since all these cases passed through their course very favorably, and all the patients were, or will be, discharged at a comparatively early time after their admission into the hospital, I will take this occasion of giving you some observations on the manner of treating this disease.

Although you may not have seen much of it, you must all have heard of the ordinary manner in which carbuncles were treated formerly, and still are by some; a method which consists mainly in making large incisions through them, and giving very large quantities of food and stimulants, as well as considerable doses of quinine, bark, and other tonics. I do not at all mean to say that the things which in these cases I left undone would have done any harm; but what I hold of them is, that they would have been quite useless, and some would have been sources of great discomfort to the patients. And in the way in which I speak of these things you may notice that I exemplify that rule which I have always impressed upon you, of asking yourselves, when you seem to have been successful with some medicine, "What would have happened if I had not given it?" The apparent consequence of giving a medicine may be plain enough; but you cannot too often repeat to yourselves the question—as a rule, I will not say of practice, but of the study of your own practice,—"What would have happened if this or that, which seems to have been successful, had not been done?"

First, with regard to the incisions made in carbuncles. The ordinary plan, still recommended by some, is, as soon as a carbuncle is seen, to make two incisions crucially from border to border. It is said that they must go even beyond the edges of the carbuncle into the adjacent healthy textures. I have not followed that method of practice very often, but I have followed it quite often enough to be sure that it does not produce the effects which are commonly assigned to it. It is commonly said that if you will thus make crucial incisions into a carbuncle, you will prevent it spreading. If you can find a carbuncle two or three days old, and cut that right across in both directions, I think it very likely that you will prevent it spreading. But even therein is a fallacy: for there is no sign by which, on looking at a commencing carbuncle, you can tell whether it will spread or not, whether it will have a diameter of an inch, or of three, six, or ten inches. The question, therefore, that I spoke of comes back, "What would have happened if I had not made these incisions?" And the answer to that question will be rather according to temper than according to knowledge. For as I watch men in their conclusions upon such cases, I generally find that self-satisfaction says, "I saved the man's life;" self-dissatisfaction, "I did him no good." The truer scientific temper stands midway, and says, "I will wait for further information on the matter—till I have seen more cases, and then decide whether, in the earliest stages of carbuncle, incisions are useful or not." After this time of three or four days I have seen sufficient numbers of carbuncles thus divided, and have divided enough for myself, to say that it will not hinder the spreading. I have seen carbuncles spread in as large a proportion of cases after incisions as in cases that have never been incised at all. I have in my mind a striking case that occurred to me early in practice, when I followed the routine, and, in a friend of my own, divided a carbuncle most freely. I cut it after the most approved fashion in depth and length and width, and then it spread. After two or three days more all the newly formed part was cut as freely as the first, and then it spread again, and again it was cut as freely. Then it spread again, and was not cut. Then, in a natural time, it ceased to spread, and all went on well. These are only general impressions that I give you, because one cannot count the cases in which cutting has been practised, and those similar cases in which it has not; nor even then could it be said whether those in which the cutting was practised would have spread if left alone. On a very strong general impression, however, I say that carbuncles will spread after cutting in as large a proportion of cases as they will spread in without cutting.

Then it is said that carbuncles are relieved of their pain if they are thus very freely cut. Here, again, however, is only a partial truth. A carbuncle of two or three days' standing, which is hard, tense, and brawny, is very painful; and cutting it will relieve, in many cases, a considerable portion of the pain. But after this, when the carbuncle begins to soften, and when pustules begin to form upon its surface, and pus in its interior, it ceases to be painful of its own accord, and without incisions. Thus there are two distinct stages of carbuncle in reference to the pain; the early stage, when it is hard and still spreading, and is generally intensely painful, and the later stage, in which that pain nearly ceases. A carbuncle divided in the first stage, in the first two or three days of its existence, may be relieved of some of its pain; if divided in the later stage, what little pain may exist is altogether unaffected by the cutting. And even cut as you may, you cannot always put aside the extreme pain that a carbuncle sometimes has, even to its later time. Some two or three years ago, I was called to a member of our profession with a large carbuncle in the middle of his back. His friends had been much alarmed about the state of his mind, for he had been suffering great mental anxiety for some time, and they were in fear lest the excessive pain of the carbuncle should, in its disturbed state, do his mind permanent damage. So they persuaded me to cut it, and I cut it after the old plan, very wide across, and far into the adjacent textures, as freely as could be. It did not in the least relieve him. I never saw a carbuncle through its whole course so painful as that was, and up to the last, till the healing was nearly completed, he suffered more or less pain in it. So that the conclusion in reference to pain must be this: if they can be divided in the first three or four days, while still hard and brawny, it may relieve some measure of the suffering; at a later period the incisions have no influence at all.

The third point is stated thus, that by the incision of carbuncles you accelerate their healing, giving facility for the exit of sloughs. But herein is the greatest fallacy of all. When the cutting of carbuncles was more customary in this hospital than it is now, when I did not cut them, and some of my colleagues did, I used to be able to compare the progress of cases cut and of cases uncut, and time after time it was evident that the cases uncut healed more readily than those cut. A man who is now in the hospital I have brought round here that I may illustrate this point to you. This is the man, Timothy C——, aged fifty-five. When he came in, his carbuncle had a length of more than six inches, and a breadth of three and a half; and it formed the ordinary hard, compact, tense, and brawny mass that a carbuncle usually does. It had at that time already taken to suppurate, and little pustules were pointing on the surface. If I had followed the practice of incisions, I should have had to make a cut in one direction of about seven inches, and in the other of about five, and after that I should have had not only the wounds wide, open, and gaping, and having themselves to heal, but a great part of the substance of the carbuncle fairly exposed, and also under the necessity of healing. But you will observe that the whole of the space that now remains to heal is a series of openings in the middle of the carbuncle, through which the sloughs are to be separated, through which, indeed, nearly the whole of the sloughs have already been discharged, and which now merely remain to be healed like the cavities of small abscesses. In that way you narrow greatly the extent of wounded surface to be healed. Indeed, it by no means always follows that the whole carbuncle, or its whole base, sloughs. Carbuncles, if not divided, not unfrequently only suppurate about their centres, and slough only in their central parts, and the borders merely clear up by the softening and dispersion of the inflammatory products in them. In every case of that kind you save greatly the amount of healing which has to be gone through. Nay, in some cases carbuncles completely abort. One of these cases, of which I have the paper on the table, was that of a woman, aged sixty-four, who came in with a carbuncle nearly as large as this, in a condition which, it might be said, required incision at once; but, with the exception of two or three small points, no suppuration or sloughing ensued. That carbuncle dispersed, aborted, cleared away. This case shows the more ordinary course of events—the sloughing of the central part, the gradual discharge of the sloughs, and the comparatively small spaces which are left in the centre of the carbuncle as the sole space in which the process of healing has to be achieved.

On these three points, which are the grounds that have been assigned as reasons for cutting carbuncles, I have now given you the evidence on which I have ceased from the practice. I fully believe that crucial incisions do not prevent extension; that it is only a limited set of cases in which the incisions diminish pain; and that with regard to the time that is occupied in healing with or without incisions, the healing without incisions is very clearly and certainly a great deal the quicker.

The kind of incisions that I have been speaking of is the old plan of crucial incisions. Another method which I have occasionally tried, but of which I can only state the same general results, is that of subcutaneous incision. This has been supposed to have the same general effect as the other; and I think that the same general conclusions may be drawn respecting it: that it is a measure unnecessary in the treatment of carbuncle, and that it retards rather than hastens the healing. When I speak thus of the incision of carbuncles, however, I do not mean to say that there is no condition of carbuncle in which an incision is not useful. Sometimes a carbuncle sloughs in its central part, with one continuous slough of integument holding in a quantity of pus. In that case you would cut through the slough, or through any adjacent part of the carbuncle, to let out the pus, as you would open an ordinary abscess. But this is not a measure which is commonly understood by the "incision of a carbuncle."

If you ask why one may not cut a carbuncle though it may do no good, I reply that you should never be actively useless, and that there are some cases in which the cutting does considerable harm. Carbuncles, for the most part, occur in persons broken down in health, exhausted by over-work, or by bad food, or in general deteriorated health—as sometimes in diabetes or albuminuria; and in all these states it is a good general rule to save the blood they need for healing. The loss of blood from the carbuncle itself would not be considerable; the hard substance of the carbuncle, when cut into, does not bleed, or bleeds but little. But to carry out the incision perfectly, you have to cut into the adjacent healthy texture; and this sometimes bleeds very profusely, so as to lead to all the distress and pain of plugging the wound with this or that substance to arrest the blood.

Another measure in the treatment of carbuncles which is supposed to be necessary, is very high feeding and large quantities of stimulants. I learned the opposite of this in one of those cases which you will do always well to study—those, namely, in which the patient refuses to do what you advise him. It is from such cases that we may often learn what is commonly called the "natural history of disease"—its course undisturbed by treatment. A case occurred to me once of an old gentleman, eighty years of age, who had a carbuncle, as big as it could be, on the back of his neck, for it extended from one ear to the other, and from his occipital spine to the third cervical vertebra. He measured it for his own amusement, and it was fourteen inches over its surface transversely, and nine inches vertically—a carbuncle, then, of the largest size, and one, it might have been supposed, attended with considerable risk to life. I urged him very strongly to take a large quantity of what is called "support," for I was at that time under an impression of its necessity. He absolutely refused, however, and nothing would induce him to take it. I was therefore content to stand by and study the natural history of disease in this huge carbuncle; and the natural history of it was a history that one would have wished to witness in every carbuncle of its size, for no case could pass through its course in a better method. He led his ordinary abstemious life, took moderate quantities of food and of stimulant, lived through a carbuncle of the greatest severity, and finally made a complete recovery, and lived for several years after.

Another case which impressed me very much was that of a friend of my own in the profession, who had a carbuncle on the back of his neck, of very considerable size. Sir Benjamin Brodie and Mr. Stanley attended him with me, and under their advice the carbuncle was cut. I watched its course afterwards, and felt sure that the cutting had done neither good nor harm. It went on as carbuncles do when not cut. But the gentleman was subject to intense headaches, of which he knew by experience the only possible remedy was almost entirely to leave off food, and absolutely and entirely to leave off stimulants. One of these headaches occurred during the course of the carbuncle, at a time when we had put him upon very full diet and abundant stimulant. He said then that he must leave off his stimulants and food, and we looked with some alarm at what would be the result on the progress of the carbuncle. I remember Mr. Stanley saying to him in his distinct manner, "My dear fellow, if you don't take food you will die." "Very well," he said, "then I will die, but I will not take food and increase my headache." According to his own wish, therefore, we reduced his diet to a very low level. The course of the carbuncle was not affected at all, unless it were for good; and after three or four days of this, which might be called comparative starvation, he described himself in his own emphatic fashion as being "as jolly as a sand-boy."

Since that time I have watched carefully all cases that I have seen, and I am certain that there is no good to be obtained by large feeding or abundant stimulants in ordinary cases of carbuncle. The whole of these cases that have been in the hospital were put on our ordinary meat diet, with a pint of porter daily; and I see that two of them have had four ounces of wine a day, one of these being a person aged sixty-four and the other sixty-three, and both having carbuncles of considerable size. You will find that for patients in private life it will do very well if you tell them that they may have about two-thirds of their ordinary amount of food, and about the same proportion of their ordinary quantity of stimulants. But indeed there is scarcely any reason to change in any material degree the ordinary mode of life of a patient with carbuncle. So far as he can with comfort take that to which he is accustomed, so far he may. If his diet has been habitually low, so it may remain; if habitually high, so, within certain limits and somewhat reduced, it may still remain.

Now you may ask what I should set down as the things to be done for a carbuncle. These boards, nearly bare as they are, may tell you. In local treatment one of the best things you can do, if the carbuncle is small, is to cover it with emplastrum plumbi spread upon leather, with a hole in the middle through which the pus can exude and the slough come away. That, occasionally changed, is all the covering that a small carbuncle will need. It is difficult thus to cover the whole surface of a large carbuncle, and to keep it clean; therefore, I think that the best application for that is the common resin cerate. This should be spread large enough to cover the whole carbuncle, and over it should be laid a poultice of half linseed-meal and half bread. And, if you want to exercise your skill, learn to make that poultice well, and to put it on well, and to keep it in its place well. That mode of dressing the carbuncle, so far as the materials are concerned, will last through its whole course; but whilst the carbuncle is making progress and discharging its slough, you will find plenty of room for the exercise of considerable skill in dressing it and filling up the cavities with soft substance spread with this ointment. Besides this, the carbuncles are to be carefully washed, especially with some deodorizing substance, as Condy's fluid, or weak carbolic acid, and the cavities may be syringed out with it. The importance of cleanliness is very great. You noticed in the man whom I showed you just now the spots of acne and boils around the edges of the carbuncle. This points out the necessity of care, which I suppose had not been taken there, to keep the surface of the skin adjacent to the carbuncle perfectly dry, and free from any contact with the discharge, which seems really to have the power of infecting the neighboring skin, and so producing the boils which are apt to arise, sometimes in clusters, around the carbuncle. Of diet I have already spoken to you. Of medicines I say nothing. Quinine, bark, and other medicines of that class, may be given if you please, or in case of evident need, and so may aperients; but there is really no need of them in an ordinary case of carbuncle. But there is one medicine which you may find very valuable, and that is opium, especially in all the earlier painful stages of carbuncle, in which it relieves the suffering as thoroughly as incisions, or anything I know. After the early stages, even that is unnecessary, except for some patient who may be unable to sleep.

But there is one measure in the treatment of carbuncle which is seldom employed, and yet is of great importance, and that is of letting the patient have very free air. The general idea that carbuncles are very dangerous diseases has commonly led to the patients being entirely confined to bed and kept shut up in their rooms. There is in that an unnecessary care; and this, too, I learned from a patient who refused to comply with injunctions—a gentleman with a large carbuncle on the back of his head, who would not keep his bedroom. He had been accustomed to an active life, and after seventy or eighty years of that custom he was quite indisposed to remain in his room. So with that carbuncle he daily came down stairs, changing his room and moving about the house as well as the pain and weakness would allow him. No carbuncle could go on better; all the stages were passed through without any risk or trouble, and it healed with unusual speed. After that I had yet a more striking case. A lady came to London "for the season," as she called it; and she had not been here more than a week or ten days before a carbuncle came out on the back of her head, just under her hair. It was a great vexation to her that she had to give up all her amusements; and so, as she did not mind the pain, she would go out. And it was then that, for the first time and the last, I saw any value in a "chignon." She dressed her carbuncle under the chignon, and she went to the park, to the theatre, and to dances unharmed, and with her carbuncle quite unseen, and no trouble whatever followed. It healed up after the ordinary fashion in about the ordinary time. But, indeed, you may see cases of this description on a much larger scale if you watch the carbuncles that come to us in the out-patients' room. There we often see them of considerable size, and they do as well among the out-patients as among the in-patients; and yet these out-patients are freely in the air all day, and many of them continue at their work. So you may set it down as one point to be attended to in the management of carbuncles that patients should not be confined to their room. They should at least have change of air in their own house; and, unless they are too low, they should not avoid exposure to the fresh open air.

Treating your cases of carbuncle upon this plan, I believe you will find that the great majority will pass through their course well. I cannot tell you what the ordinary proportion of deaths from carbuncle is; but I know that carbuncles are commonly looked upon in the profession as dangerous things, and a large carbuncle on the back of the head is considered to be fraught with risk to the patient's life. But that is very far from being the case in my experience. Remembering as far as I can, or rather guessing at the number of carbuncles I have had to treat, I should say that there is no other disease of the same extent and general severity which is attended with so little risk to life. During twenty years of hospital and private practice, I cannot have treated less than 200 carbuncles; and of these 200, four have died, giving a mortality, at a fair guess, of only two per cent.—a mortality which is less than that of most of the minor operations of surgery, and less really than that of any disease of equal severity that you can name. Of those four deaths, one occurred in a patient aged seventy-eight, who died of erysipelas after the carbuncle had nearly healed. Another was a gentleman of about fifty-five years of age, who died of chronic pyæmia. The third was a gentleman aged fifty, who died with acute pyæmia. And the fourth was a patient of about fifty years of age, who died rapidly exhausted. The first three were from causes which may almost be called accidental; for so we call them when occurring after an operation, and it would be unreasonable to suppose that any other method of treatment would have averted the consequences. The other died, possibly, on account of the deficient stimulation; for he was a man who had lived freely, and took during treatment less than he had been accustomed to have. The main point, however, to which I wish to direct your attention is that the mortality may be as little as two per cent. I cannot doubt that the mortality was considerably larger when carbuncles were severely cut; for the severe cutting meant often severe bleeding, and was attended with all the consequences of large wounds. Thus, though I do not know the exact proportion, I believe that the general reputation of the danger of carbuncle was well founded, and that among the reasons for the diminished mortality of carbuncles may be set down as chief, the more frequent avoidance of the custom of cutting them.

Speaking of the mortality of carbuncle, however, I must remind you that I am not speaking of a disease which sometimes passes under the name of carbuncle—the carbuncular inflammation of the lip which sometimes occurs in young persons: a disease which you may not have seen, and may pass many years without seeing. It was described by a former house-surgeon of this hospital, Mr. Harvey Ludlow, as malignant pustule of the lip. Dr. Budd, of Bristol, has also so described it. Commencing at one spot, inflammation of the whole lip follows and spreads to the face, and then disease of the lymphatics ensues, with pyæmia as its consequence. It is a disease so unlike carbuncle, that it ought not to be known under the same name. It seems to me not like the accounts given of the malignant pustule abroad, and I have seen no other disease like it in England. It attacks especially young persons from fifteen to twenty-one; and of fifteen cases that I have seen, only one recovered. That disease is not carbuncle, nor is the mortality of that disease to be counted in estimating the mortality from carbuncle. Ordinary carbuncle on the lip and face has none of those special characters, and is not more fatal in those situations than in any other.

Clinical Lecture

ON

DISEASED ANKLE, TALIPES, DISEASED METATARSO-PHALANGEAL JOINT, &c.

By James Paget, D.C.L., F.R.S.,

Surgeon to St. Bartholomew's Hospital.

(Shorthand Report, revised by the Author.)

The case on which I wish to speak to you today is that of a man in Darker ward, and on whom I am going to operate this afternoon. Very briefly, the man is going to have his foot cut off because of the consequences of corns and bunions, and it may well attract your attention that a disease considered so trivial should have necessitated an operation so serious. Here is the case, which has been reported by Mr. Sloman:—

"Joseph H——, aged thirty-eight, was admitted into the hospital on November 20th, 1868, with the following history. Twenty-nine years ago, when nine years of age, he had a heavy blow upon the right ankle, to which he attributes a contraction of the tendo Achillis, which, however, he did not notice till ten years afterwards."

Take that part of the case first. A man has a blow upon his foot, which is followed by symptoms of inflammation about his right ankle, and that is followed by contraction of the tendo Achillis, which was noticed at the time, but of which he did not observe any special consequences till ten years afterwards. There is a point therein which you should study carefully, the tendency, namely, for diseases of the ankle-joint—and the same may be said, in a somewhat less degree, of diseases of the whole tarsus—to be followed by contraction of the tendo Achillis, and other structures behind the joint. You know the general rules regarding the posture in which the several joints, when diseased, should be maintained. For instance, if a man have diseased knee-joint, it should be kept straight, in order that if he acquire a stiff joint, he may have the limb in the best position for support. So with the hip-joint. If the elbow is diseased, it should be bent with the arm at right angles to the forearm, which is, on the whole, the most useful posture in which the arm can be placed. But a rule of this kind is much less clearly laid down in relation to the ankle-joint, and yet it is not less necessary to be observed. If a patient have diseased ankle-joint, and you at all anticipate that the limb will have to be kept in one posture for many months, or even for many weeks, in succession, take care that the foot is kept at a right angle to the leg, or even at a little within the right angle, for that is the position of most utility when the ankle-joint is stiffened, or partially stiffened, so as to admit of but little movement. You will observe that the rectangular position is not one which the foot would of itself assume. If you look at patients with diseased ankles, the foot always hangs with the toe pointed, hanging down as the patient walks; and as he lies in bed upon his side, you see the same thing constantly. There is a lad now in the hospital with disease of both hip-joints, but no disease of the ankles, and yet simply by their own weight, the feet are both pointed downwards, and stiffish. When a man lies upon his back, the bedclothes rest on the top of his toes, and they direct his foot downwards. So in the large majority of the cases of diseased ankle or tarsus, in which you take no special pains to obtain this rectangular position of the foot, the patient gets up from his disease with his toes pointed, with contraction of his tendo Achillis, and other structures behind the joint. Bear constantly in mind, then, that if you are not careful in your management of diseased ankle or tarsus, contraction of the tendo Achillis will ensue, and have to be treated after the original disease is cured. It is to avoid this that all our splints made for diseased ankle-joint are especially directed to be applied with the foot in the rectangular position.

See next what follows when this rule is not observed. The consequences were not noticed till ten years afterwards; but, "since the latter date (nineteen years ago), he has had marked contraction of the tendo Achillis, but it occasioned him no special inconvenience till five years ago, when he had a soft corn on the sole of his foot. This he cut and made bleed, and the wounded part, being walked upon, formed an ulcer, and has never healed since." Thus the man gets up from his diseased ankle-joint with contraction of his tendo Achillis. From that time onwards, therefore, instead of walking, as a man should, with his foot supported on the ball of his great toe, the ball of his heel, and the ball of his little toe, his heel does not touch the ground, and the weight of the body rests on the ball of the great toe and the ball of the little toe. Then there comes what always ensues in these cases—what ensues in every case in which the weight of the body is not properly borne upon the three chief supports in the foot,—corns and bunions upon the places where the chief pressure does fall. If you look at any distorted foot—at this talipes varus and this talipes valgus,—you will see that the points of the foot on which the weight of the body falls are always covered with corns, and usually under them are bunions, ganglia or sacs containing fluid; and for a time serving a good end in distributing the pressure over a larger portion of the foot than else would have to bear it.

Thus the man gets corns and bunions over the ball of the great toe, the ball of the little toe, and between them, and then he cuts the corns, and there comes an ulcer, and the ulcer never heals. For five years, up to the time of his admission into an hospital, the ulcer had remained. "He was admitted into another hospital, and about the middle of August his tendo Achillis was divided, and a splint put on, which, however, was taken off after a week, on account, he says, of being too tight. Afterwards the ulcer was treated with poultice, wet lint, and caustic. About the middle of October he left that hospital with the ulcer nearly healed." But it could not long remain so under the distress of continued walking upon it; and he stays no long time before he is admitted into this hospital in November. On admission, one saw at once the character of the ulcer and the condition of the foot—rectangular talipes, from contraction of the tendo Achillis. Then I followed the same treatment which had been adopted in the other hospital. "On Nov. 10th, the tendo Achillis was again divided, and Scarpa's shoe put on, with an arrangement for shielding the ulcer from pressure and friction. The ulcer healed, but still the fore part of the foot remained very painful, and he was unable to bear the pressure of the instrument sufficiently for the extension of the tendo Achillis."

Now, also, another feature of his case became more prominent. "Under the ball of his great toe, at the inferior aspect of its metatarso-phalangeal joint, a large bursa, the open cavity of which had formed part of the ulcer, became more than before acutely inflamed. Its inflammation appeared to extend to the joint. All the textures about the joint swelled, and became extremely painful, and suppuration ensued, and extended along the sole of the foot."

The bunion, then, beneath the great toe had, as not unfrequently happens, formed a communication with the joint of the great toe. In that respect this constitutes one of a class of cases which you will have to study very carefully—those in which bunions open into joints. They are sources of great discomfort, and sometimes of the necessity of amputation of one or more toes. Most often this occurs in the bunion at the junction of the metatarsal bone and first phalanx of the great toe. Whether by congenital defect or possibly only by the shape of the boot, you will find a large number of people in whom, at this articulation, the great toe bends outwards, and over the joint there is commonly a corn, and beneath the corn a bunion—a bursa containing fluid right over the joint. That, subject as it is to continued pressure and friction, is very apt to inflame and suppurate, and sometimes its suppuration extends deeper, and it opens into the cavity of the great-toe joint. When this happens in a very old person it is productive of far less trouble than you might imagine. It rarely produces any diffuse suppurative inflammation about the joint, and with rest and care the joint can be patched up so that the patient can get about. But in a younger person it often produces most acute inflammation through the whole articulation, and that inflammation becomes diffused through all the textures round about. It did so in this man. When the state of affairs became manifest, he himself begged for the amputation of his foot, and I was not long in consenting, for it seemed certain that though the foot might have been preserved for him, and though it might have served for a man of ease and leisure, it would never do for a man who had to work for his living. One must have left a deep scar at the bottom of his foot on which he could not have borne pressure in standing or walking; and one could not change the position of his foot, for he could not bear the pressure of an instrument while the metatarsus had suppuration over it. Therefore, on these grounds, we have decided on the amputation of his foot. I shall amputate it according to the method called after Mr. Syme—that is to say, removing it at the ankle-joint, and including the os calcis. You may ask why I am going to perform an operation at so great a distance from the seat of disease, which does not extend very far above the metatarso-phalangeal joint of his toe. It is a principle in all operations upon the foot, that you should take care that the scar is not afterwards exposed to the pressure and friction to which it is liable when the foot is used in walking. Now, this man has a contraction of his tendo Achillis—a contraction, it seems, not curable by any means that one can apply to the front of the foot. He would be left, after an amputation anywhere in the front of his foot, with a scar—or, at least, with the stump of the foot —directed, not straightforwards, but obliquely downwards. The stump, if for instance Chopart's operation was done, would be directed obliquely towards the ground, as the foot is now. The man would be put into a condition no better than he has been in hitherto. If he were able to walk on the stump at all, corns and bursæ would form, and, after a little time longer, ulcers, and in all probability ulceration of the scar, quite unmanageable and unfit for healing. So that I cannot doubt—and in this opinion I have the concurrence of all my colleagues—that the best plan will be to remove the whole of the man's foot at the ankle-joint, including the os calcis, and then to get for him a round stump, on which, as he walks, he will come plump down, and that upon a piece of integument naturally fitted for bearing the support of his body and the friction of the ground.

The case, then, may serve to illustrate to you these two or three points of great importance. First, in regard to the position the foot must be put in, in the treatment of all cases of diseased ankle-joint, diseased tarsus, diseased bones of the foot—namely, with the foot at right angles to the axis of the leg. Then the series of events that occurred: corns and bunions not carefully treated; the liability of the bunions to suppurate, and to open into the cavity of an adjacent joint; then the symptoms indicating the necessity of amputation; and then, lastly, the rule that in amputations you must look most carefully that the surface of the foot which you leave is one that will fairly and thoroughly bear pressure and friction.

Address

DELIVERED AT THE

MEETING OF THE MEDICAL TEACHERS' ASSOCIATION.

Friday, January 15, 1869.

By Sir William Jenner, Bart., M.D.,

President.

Gentlemen,—I am fully sensible of the honor done me when an Association, such as this is, composed of so large a proportion of the *élite* of the profession, elect me its President. The remarkable zeal in the promotion of the objects of the Association shown by the distinguished surgeon who has preceded me in this chair, and the great ability he displayed in the discharge of his duties as President, render the position at once more honorable to hold, but more difficult to hold with credit.

I should proceed at once to the business of the evening, were it not that my post affords me an opportunity of saying a few, a very few words on a point regarding which I, as a teacher of clinical medicine, entertain a decided opinion. No one long engaged as a teacher in a medical school can fail to have arrived at a conclusion in respect of the wisdom of the regulations and character of the examinations of the various licensing bodies; and, so far as my memory serves, while I never met a man who approved of the regulations or the examinations, I am not sure that I ever met two men who agreed as to the precise change that ought to be made: so many men, so many opinions.

Now the opinion of so large and distinguished a body of teachers as constitute this Society ought and must, exercise great influence on all questions of medical education. The opinion of this Association must have great weight in moving the several licensing bodies when they meet to frame regulations to guide the studies of medical students, and to frame the rules by which their examinations are to be conducted. But to have such weight, to exert such influence, the opinions expressed by this Association must represent the convictions of an overwhelming majority of the teachers who compose it. No licensing body would long resist the public opinion of the associated teachers; but the public opinion of the teachers, as distinguished from the opinion of individuals has to be formed; and one great advantage attending the meetings of this Association is the opportunity they afford for ventilating and discussing the opinions of individuals, and so of forming a general public opinion among teachers on the subject of medical education and medical examinations.

I desire now, in a few words, to express for myself the opinions I entertain with regard to one important point in connection with the question of medical teaching. At the same time I do not wish to press the acceptance of my opinions on the Association. I desire only, so to say, to ventilate them.

The present tendency, it seems to me, is to educate the student too widely in the collateral branches of science, and too little in the practical; and not only to educate him too little in the practical, but—and this is the essence of the matter—to examine him imperfectly in the practical branches. The license of the special licensing bodies ought to ensure to the public (for whose interest, and not for that of the profession, they have charters) a supply of men competent to treat them in sickness. The object and end for which they enjoy privileges are that they may send forth clinical physicians and clinical surgeons. Now, as a teacher of clinical medicine, I doubt if their regulations are so framed as to tend to attain this end in regard to my department; and I doubt still more if their examinations are so conducted as to ascertain if the student has attained this end. Clinical medicine can be learned only by those who attend regularly in the wards of the hospital; because in the wards only has the student an opportunity of witnessing the daily progress of acute illness, of watching the effect of remedies, and of seeing the relation between the symptoms during life and the changes after death on which those symptoms depend. The practice of the physician to the out-patient department affords to the student valuable supplemental clinical instruction.

Our hospitals yield abundant materials for clinical teaching, and the physicians to those hospitals are a body willing and competent to give the best clinical instruction; but the students who should profit by these opportunities comparatively rarely visit the medical wards. It is said, "It is easy to take a horse to the water; the difficulty is to make him drink." Now, speaking as clinical teachers, I think most of us could say that the difficulty is to get the horse to the water. Once get him there, and we could make him drink. Let the licensing bodies make the student attend the wards of the hospital, and then, with rare exceptions, he will leave with a fair amount of clinical knowledge, and such kind of clinical knowledge as will enable him to add to his stock with every case he sees. Now I doubt if any regulations as to the time, order, or method of the student's studies will secure his attendance in the wards—his diligent attendance—his regular attendance; will ever, in fact, succeed in forcing him to do that which it is essential for him to do if he is to be a clinical—that is, a practical—physician. All school rules and regulations, however successful they may be for ordinary attendance in the theatre, break down when applied for the same purpose in the wards.

There are two things which it is essential for the licensing bodies to do, if they are to fulfil the end for which the public created them—viz.: 1. So to dispose of the collateral studies that the student shall have *time* to devote to clinical study; I mean the student who desires to complete his education within the shortest possible time allowed, and so at the least possible expense. 2. So to conduct examinations as to give a marked, an unmistakable prominence to the importance they attach to the student possessing clinical knowledge.

For my part, after long reflection, and after talking over the subject with many practical men, teachers and examiners, I see but one mode of attaining this object, and that one would be, I believe, effectual. It is this—namely, to test the candidate's clinical knowledge before submitting him to examination. Thus I would have the student made to understand that he must know, and must show to the examiners practically that he knows, how to percuss, how to palpate the abdomen, how to examine by auscultation the heart and lungs, how to test for albumen or for sugar, how to examine a heart, a lung, or a kidney after death; that he must show that he knows practically how to diagnose a largely hypertrophied heart, a solid lung, a pleura filled with fluid, a big liver, ascites, psoriasis, purpura, and such like simple things. To learn practically these things, he must go into the wards and the dead-house of the hospital; and the horse being once at the water, it would be the fault of his teachers if he were not forced to drink deeper than the shallow. The student must, however, if the end of forcing him into the wards is to be attained, be fully satisfied that he will be rejected if he is not a clinical physician; and the only way, I say, in my opinion, to impress this on his mind, is to reject him *at once* for ignorance of practical knowledge. It must be made clear to him and to his hospital fellows who are to follow after him, that this knowledge is that without which he will not be admitted to the written or *vivâ voce* examination proper. Fail in this, and no amount of book or lecture knowledge will save him; for he will have no opportunity for displaying his learning. Knowledge would then take its proper place in relation to learning in his mind; and the medical wards of the hospital be as much frequented—as regularly frequented — as are the more popular lecture theatres.

As to any attempt to determine the mode by which clinical teaching is to be effected, it would appear to me to be far worse than useless. Every teacher will, if he be worth the name, have his own method; he will understand best how to convey the practical knowledge he possesses to the student, and the student will soon learn where he is taught with the most certainty the knowledge the licensing body compels him to possess. And one great advantage that the various methods adopted by different teachers of clinical medicine possess is, that it enables the student to select for his special teacher that one whose method the most perfectly suits his mental constitution.

I hope on some future occasion this subject may again be brought before the Association in such a form as to permit it to be discussed, and the advantages and disadvantages of compelling the student to satisfy the examiners that he possesses clinical knowledge, before being admitted to his examination proper, be stated at length.

Abstract of a Lecture

ON THE

USE OF BRUCINE IN STOMACHAL EPILEPSY.

By J. Spence Ramskill, M.D., London,

Physician to the Hospital for Paralysis and Epilepsy; Physician to and Lecturer on Medicine at the London Hospital.

A large proportion of the cases of epilepsy have, as an aura, or warning of the coming fit, some disturbance referred to the stomach — such as nausea, attacks of flatulence, undefinable sensations, represented as rising upwards, and consciousness ceasing when the sensation reaches the head; and these are the cases, also, in which vomiting follows the fit. The vomited matters always contain food, and sometimes in an undigested condition, although some hours may have elapsed since the last meal. There may be no proper symptoms of dyspepsia in the intervals between the fits beyond a constant disposition to the generation of flatus, indicating permanent disorder of the ganglionic nerves. The functions of the pneumogastric, moreover, become perverted; and the cause of this may be at the root of the nerve, or at its periphery. Supposing disorder of the centre to be the starting-point, then perversion of the normal function of the nerve at its periphery in the stomach (and also sometimes elsewhere) is its natural expression. But supposing the nervous centres to be only in the usual condition belonging to epileptics — not healthy, but in a morbidly irritable state,—then a temporary disorder, produced by undigested or indigestible food, in its peripheral branches, will increase centric disturbance, cause reflex contraction of cerebral bloodvessels governed by vaso-motor nerves, and an explosion in the shape of a fit.

The same argument applies to disorder of the small intestines, the splanchnic nerves furnishing the medium of communication between the mucous membrane and the reflex centres. The fit in that case is usually followed by diarrhœa, and not by vomiting. Such cases as these are not best treated by bromide of potassium alone. One of the bad effects of this drug, perhaps the only one caused by the bromide even in moderate doses, is what we call the bromide dyspepsia. The objective symptoms are foul breath, a white tongue, involving the edges as well as the dorsum, and not necessarily furred, with great languor and sleepiness. Anorexia must be added to the list. It will be found that when such a condition exists there will be an accession of fits, although up to the time of the stomachal disorder the attacks may have completely ceased.

Under such circumstances your best proceeding will be to use any ordinary alterative aperient with effervescing salines, and when the color of the tongue has returned—and by that time the other symptoms I have mentioned will have disappeared also—then to recommence the bromide treatment in conjunction with lactate of soda, in a dose of from five to fifteen grains, in some bitter infusion, the best of which is the infusion of chiretta. I prefer chiretta because it acts as a cholagogue, and the only objection is that it occasionally produces diarrhœa. You may give the bromide for a long period in this combination without having to suspend it on account of the "bromide dyspepsia."

Now a suspension of epileptic attacks is, for many reasons, always desirable. Yet suspension is not cure; and, for the most part, when you cease to give bromide of potassium, the attacks return. Can we prevent these? I think we can often do so by building up the patient, by using means to improve the nutrition of the tissues, of the nervous masses, and of the ganglionic nerves especially; for I hold that a convulsion is an impossibility in a perfectly healthy brain and nervous system; and I think these views should form the basis of all treatment. Is there any tonic remedy of value for this purpose? I think so; and I have found the best in brucine,—beyond many of recognized value. Mr. Tyrrell (of Malvern) has published some cases treated successfully by strychnine. I have used this drug extensively, and when the patient can remain under close observation, or if he be attended by intelligent friends, I should not hesitate in proper cases to recommend its use. But there are cases of idiosyncrasy, and small doses will sometimes evoke disagreeable toxic symptoms. I have not been annoyed in this respect with brucine, perhaps because it is a weaker alkaloid, and the patient gets more easily accustomed to its use. Its physiological effects, however, so closely resemble those of strychnia, that it may be taken for granted their therapeutical virtues are the same. I usually order it in a solution made of the same strength as the liquor strychniæ of the Pharmacopœia, and commence with a dose of ten minims, to be taken twice daily; every third day an addition should be made of five minims to the dose, until from a third to half a grain is reached. If any stiffness of jaws or other toxic symptom appear, the dose is to be diminished by five minims, and continued until any new objectionable symptom is manifest; then it is again lessened. You will not find any benefit from either brucine or strychnine till a full dose is reached; often the reverse effect. As a rule, patients will take twice as much brucine as strychnine, without any necessity for diminishing the dose. After the continuous administration of brucine for a month, I think it well to suspend its use for some days, and then again resume it. I may remind you that Dr. Marshall Hall used strychnine in epilepsy, but he gave it in very small doses, and without success. Given in large doses, and with the precautions already mentioned, I have not met with any case suggesting cumulative action, or suddenly poisonous effect, from the administration of either alkaloid. You will find great satisfaction in giving bromide in large doses at bedtime, at the same time ordering brucine twice daily; thereby you ensure the sedative action of the bromide, and the tonic effect of brucine on the whole nervous system.

Original Papers.

ON THE NUTRITIVE VALUE OF DIFFERENT SORTS OF FOOD.

By Baron Liebig.

(Continued from March No.—p. 146.)

Meat contains the albuminates, which are the flesh-producers, in the most soluble form; it is digested in the shortest time, and for its transition into the blood the least amount of work is required. Indeed, the intestine of carnivorous animals is the shortest and most simple of any. The carnivorous animal bolts its food without it being necessary to reduce its size by mastication. The smaller the quantity of the albuminates in vegetables, the more complicated are the organs of digestion of the animals which feed on them. With many, a chewing and rechewing is necessary, in order to separate the food sufficiently for the extraction of the nutritive parts.

Inasmuch as the effect of food depends on its transformation into blood, it must be self-evident that in a given time the effect of the food is in proportion to the rapidity with which its transmission from the intestines to the bloodvessels is effected. Experience shows that with energetic work, for work to be performed in the shortest time, a purely vegetable diet is not compatible.

A woodman in the Bavarian highlands consumes in winter, in six working days, 14 lb. of flour, from 2 lb. to 3 lb. of butter, 1 lb. of bread, and half a pint of brandy. He consumes the flour in the form of a sort of pancake, fried in butter, and chopped into small pieces, for he thus saves a good deal of the work of mastication. The quantity of flour corresponds to 2¼ lb. of bread daily (100 lb. of flour = 140 lb. of bread), which at 8 per cent. contains 130 grammes of albuminates. Thus he consumes altogether as much as a well-fed working man. His work is hard, but not requiring energy; after every blow with his axe he can rest as long as he pleases, for the tree stands still, and does not force him to make haste. The man in the Munich brewery requires another diet. The work he has to do is the hardest of all, and only strong men are able to endure it, for the operations follow one another uninterruptedly, and tax the strength of the workman unceasingly. He has no time for resting during his work, which must be done as quickly as possible. According to the quantity of food consumed in seven months by 95 men in a Munich brewery, each man, in meat alone, consumed 120 grammes of albuminates, with bread—altogether, from 160 to 170 grammes daily: thus nearly three-quarters meat, and one-quarter bread. And this is easily to be accounted for. The brewer's man consumes in meat a nutritive matter, which for its transition into the body requires a minimum of inner organic work, and he receives in less than three hours, from the albuminates of the meat, a store of strength in his body which enables him to dispose of it at pleasure. The woodman in the mountains must, on the other hand, wait from eight to ten hours until the component parts of his meal act on his body with full effect. Two workmen of the same weight require daily a certain number of grammes of albuminate in their food in order to lift or remove a certain weight a given number of feet; he, however, who is pressed for time, and forced to accomplish his work with greater speed, must have a meat diet, while for the other a purely vegetable diet will suffice.

For a soldier, in time of peace, 125 grammes of albuminate are enough to maintain him in health, of which one-quarter must be in the form of meat; but in war time, with fatiguing marches, and laden with 60 lb. of clothing and ammunition, he would, with such a diet, succumb to the over-exertion; he requires at least from 140 to 148 grammes of albuminate, the half of which should be in the form of meat. Thus we may assume that, under similar circumstances, an army of soldiers whose daily rations did not exceed 125 grammes of albuminate, one-quarter of which only was in the form of meat, would be beaten by an army in which each man received 145 grammes of albuminate, half of which was in the form of meat: for the effect would be the same as if the latter army had better weapons; its capacity for motion is greater, and it is in a given time capable of greater exertion. We are too apt to forget that the soldier's food is for the man what the powder is for his musket.

All these are very simple and intelligible matters, which may be learned from any coachman; for exactly the same laws obtain for the work we require of our cattle. "Our horses must have oats; the oats must be in them," said an English omnibus driver to Professor Playfair. "If they come from the farmer they are round and plump, for the farmers feed them well. But such horses are not fit for use. They sweat directly, and cannot bear a hard run. *The oats must be in them.*"

What meat is to a man, oats are to horses, or, in Arabia, barley, which of all vegetable fodder contains the albuminates in the most concentrated form, and in a state the most easily transmissible.

With regard to the organic work by which the heat-generating substances are fitted for generating warmth, the same relation exists between starch, sugar, dextrin, fat, and alcoholic beverages. Starch demands the longest work; it requires more time and more additional juices which the stomach must secrete, in order that it may be fitted for passing into the blood, than sugar and dextrin, which are both of themselves soluble in water. Thus the higher value which flour possesses for making bread is explained. By its porosity bread is more easily penetrated by the gastric juice, and is soon amalgamated, because a part of the starch in the flour has already undergone a transmutation into dextrin, or some other similar easily-soluble matter. Fat is slowly received into the circulation, but its effect is of longest duration. Fat food is most fitted for winter, starch and saccharine nourishment for the summer. Beverages abounding in alcohol act, as regards the generation of warmth, the quickest of all.

In the animal body a certain number of degrees of warmth, and a certain quantum of force (strength), must be daily generated, according to exterior circumstances, and as the requirements of one day or one season are greater than in another; and a right nutrition pre-supposes that those component parts of the food which serve to nourish and to warm are contained exactly, or nearly so, in the nutriment in such proportions as the body requires. An extra amount of warmth-producing nourishment could not make up for a paucity of strength-producing substances; it would be of no effect in nourishing the body, and would only burden it. An extra amount of strength-producing food would, beyond a certain limit, not add strength, because in the individual only a certain measure of strength can be generated.

Economically considered, an acquaintance with the right relations of the warmth- and strength-producing component parts of our daily food is of the greatest importance. Long before science had furnished breeders with a sure basis to go upon, the husbandman endeavored to find out the relative nutritive value of his different sorts of fodder, and it is to this endeavor that we owe the solution of some of the most wonderful and most important physiological problems.

The food of men and of animals contains, namely, the albuminates, which are necessary for producing flesh and strength, and the heat-producers (starch, sugar, and fat) in very different relative quantities.

The seeds of the cereals—wheat, rye, barley—contain for every ten parts albuminate fifty to fifty-five parts of starch. A similar proportion (one to five) of the albuminates to the digestible warmth-generating substances is also found in good meadow hay. In potatoes, rice, turnips, &c., this proportion is quite different. In potatoes, for 10 parts albuminate are 85 and often 90 parts of starch; in rice 120; in peas, on the contrary, only 25 parts; and in rape-seed flour there are but 13 to 14 parts of heat-generating substances. Be the state of the animal what it may, there is for satisfying all its wants but one right proportion of the albuminates, heat-producing matters, and nutritive salts to be adopted. But this proportion varies according to circumstances, and must be altered as the breeder or grazier has this or that aim in view. If, for example, he desires to obtain weight by his system of feeding, then the proportion of the albuminates in the fodder must be increased; and that fodder is, of course, for him the best which enables him to produce a maximum of meat, milk, and wool, at the smallest expenditure for nourishment.

It is clear that if an animal—a pig or a sheep

—requires in its food 10 oz. albuminate, and 55 oz. heat-generating matter, for its nutrition, it will, if the 10 oz. albuminate be given in the form of potatoes, have to eat fifteen pounds of steamed potatoes, and in these 95 oz. to 100 oz. of starch—thus, 40 oz. to 45 oz. of heat-generating matter more than the animal can turn to account. These 40 oz. of starch have a certain nutritive, and for the breeder a pecuniary, value; which, however, are in this case wholly lost to him, as starch in manure does not add to its value. A similar loss would accrue if the animal were fed exclusively on beans or peas. In 50 oz. of peas the pig would get 10 oz. of albuminate, but only 12½ oz. of starch, 42½ oz. therefore less than it required. For the perfect nutrition of the animal somewhat more than 100 oz. of peas would be required, and therein 10 oz. more albuminates would have to be given, which are ineffective for producing flesh, because they would be used up instead of the missing starch, in order to generate warmth.

Thus it will be easily understood what an advantage to the breeder it must be, since science has made him exactly acquainted with the component parts of fodder and their relative worth, to be enabled by properly mixing food to obtain, without loss of means expended, the most favorable results. It teaches him that with a mixture of 7½ lb. of steamed potatoes, and 25 oz. of peas, he can feed his pig well, and turn to the best account the whole quantity of albuminates in the peas and all the starch. In this wise the cattle breeder makes up for the missing hay by a blending of other fodder which he can command, such as turnips, potatoes, peas, rye, straw, clover, rape-seed cake, and peas-flour. What he has to do is this: he must so mix them that they are really a surrogate for the nourishment contained in the hay; and by finding out the fitting proportions of their component parts—fitting as regards the aim to be attained—the most extraordinary results have been arrived at in breeding, fattening, and in producing milk and wool.

The chief means of subsistence—grass or hay—provided by nature for herbivorous animals contains the albuminates, warmth-producing matter, and the nutritive salts in such admixture that by their co-presence in the process of digestion and nutrition each of these elements produces the full effect belonging to it; and when the breeder, who has no hay, but other fodder, makes up a mixture of food which in its nutritive capability supplies the place of the missing hay, he in no wise alters the nutritive value of the food thus prepared.

In the nutrition of men, however, totally different relations are to be taken into account. By preparing his victuals by means of boiling, baking, roasting, by turning the corn into flour, man changes not only the condition and the nature of his food, but very frequently its composition also; and, in many cases, its nutritive value is notably changed by the process of preparation. This is principally effected by the change in the proportion of the nutritive salts which his food contains in its natural state.

Although the part which these salts play in the process of digestion, in the formation of blood, and in general assimilation, has been known for more than twenty years, with the most positive certainty (see "Chemical Letters," vol. ii), it seems as if in practice the knowledge of it were still ignored.

The importance of the albuminates and the heat-generating matters is recognized, it is true; also that the first, in comparison with the others, have a higher value. It is possible, indeed, in the process of nutrition to supply the place of the heat-generating substances, such as starch, sugar, and fat, by means of meat; but not *vice versâ*, because the heat-generating substances are quite incapable from their composition of serving to aid in the structure of the body, and therefore it may be said that the albuminates possess a pre-eminent value. On the other hand, the nutritive salts, without whose co-operation the albuminates, as well as the heat-generators, would be quite incapable of giving nourishment, are generally hardly taken account of; and we read long dissertations on food and nutrition in which everything under the sun is spoken of except the nutritive salts, and in which even the words "nutritive salts" are not to be found, just as if they had no existence.

It is considered a matter of course that when the albuminates are present, the nutritive salts are so too; but this is not always the case, and usually not in our food.

A striking example in this respect is afforded us in a hen's egg—in any egg, in short,—the popular opinion about which is, that it is at least as nutritious as an equal weight of meat. Physiologists have long since shown that an egg is not to be compared to meat as a means of nutrition. With meat we are able to support the life of a carnivorous animal, but not so with eggs: a dog eats the egg, but does not digest it; and in presence of a dish full of boiled albumen, or boiled yolk of eggs, or of both together, he will die of starvation.

When we consider that, in brooding the egg, the whole animal, with the flesh, blood, vessels, brain, bones, and feathers, is developed from it, it is seemingly incomprehensible that the egg, taken as food, cannot serve for like formations when received in another organization. This is quite simply to be explained by the disproportion of the constituents of the nutritive salts in the egg—of potash, of lime, and phosphoric acid, &c. The nutritive salts of the egg contain, to 100 parts phosphoric acid, 38 parts potash; meat equivalent to the same quantity of acid, contains 140 parts potash, being 102 parts more. The egg contains lime, it is true, but not enough by far for the formation of the skeleton of the animal. In the nutritive salts of meat the phosphoric acid is neutralized; in those of the egg, on the contrary, is 30 per cent. of free phosphoric acid. Now, from the egg blood ought to be formed; but blood is an alkaline fluid. Meat, in the nutritive process, is converted into alkaline blood; the egg, on the contrary, can only form blood of an acid reaction, which is incompatible with the organic process: nevertheless, free, phosphoric acid is a necessary condition for the development of the animal. The fact is, that during the brooding time, the free phosphoric acid dissolves the carbonate of lime of the shell, which thus gets always thinner and thinner, and is at last not thicker than a sheet of letter-paper. Phosphate of lime is thus produced, and with it the material hitherto wanting for the formation of the bony scaffolding of the body—of the skeleton; and as the free acid is gradually neutralized and used up by the lime, the blood receives the alkaline quality proper to it.

Thus, then, in the egg the building up of the body of the animal is provided for in the wisest manner. By means of the shell it receives the full nutrition required for the development of the embryo, and is also nutritive for man when taken with other food whose component parts are fitted to neutralize the free acids or to supply the place of the missing alkalies. If we compare the egg with milk, we find the latter is so composed that we may look upon it as a solution of the egg and the eggshell together.

The correctness of these conclusions is easily proved as regards meat. If raw or boiled meat be well soaked in cold or hot water, it loses with the soluble nutritive salts (phosphates) which the water draws out of it, its nutritive value. The residue of the meat will not be eaten by any animal, though, perhaps, if it is mixed with a little fat, an inexperienced young dog, when very hungry, will allow himself to be deceived and eat of it, but the second time he is sure not to do so. In the soaked meat the necessary conditions for its digestiveness (the nutritive salts) are all wanting.

The relations of the nutritive salts to the nutritive process, and the necessity for their presence, are easily intelligible. One principal ingredient of them, phosphoric acid, is a component part of all the tissues, the blood and the juices of the brain, and the nerves, and is quite as important for their formation as their combustible elements: potash, soda, iron, and common salt are preponderating elements of the blood.

Much has been said about the importance of common salt, and it is sufficient to point to the fact that Nature has provided for its presence in the egg, thus upholding its indispensability in the vital process. One-sixth part of all nutritive salts in the egg is common salt.

Whoever is a little acquainted with Nature will hardly doubt that in the organic world all is ordered in the most fitting manner, and has a meaning even when man does not understand it. As soon, however, as man lays his hand on the work, at once all is changed, sometimes for the better, often for the worse. The Divine gifts are not unfrequently spoiled; and this may with perfect truth be said of man's various food.

If, in an hospital, the half of the meat-broth be employed as a medicament for convalescents, and we say, for example, that in the used meat-broth the half of the nutritive salts of the meat is present, the meat remaining has only half the nutritive value of the same meat when roasted. If the boiled meat be given as a supplement to the roast joint, it does not add to it a nutritive power, as the meat long soaked in water has no nutritive quality more.[*]

In many different kinds of fodder, in order to establish a right proportion between the albuminates and heat-producing substances, the full effect can only be attained if the nutritive salts are present in sufficient quantity and those which are wanting are supplied. With sheep it has been observed that when fodder is given them consisting of 2½ lb. of winter straw and 3 lb. of potatoes, a portion of the latter passes away undigested; but that if ½ lb. of peas be added, the starch in the excrements disappears, and the animal gains in weight visibly, which before was not the case. Peas are rich in nutritive salts, and nothing can be more certain than that these contributed to turn to account the starch for the nutrition of the animal.

The very striking fact that in the fodder of animals 74 per cent. of the albuminates in wheat straw, 51 in oat straw, in clover hay 49, and in meadow hay 40 per cent. remain undigested, is to be explained perhaps by the absence of certain nutritive salts, as with these, as is the case with beans and peas, they are the most soluble, or the most easily digestible, of all nutritive substances We should always keep in view that no single component part of our food acts of itself alone, and that the one missing part makes the others inefficient.[*]

In salting meat, about 15 per cent. of the meat-juice, and with it a certain quantity of nutritive salts, pass into the brine. Fresh roasted pork has therefore a greater nutritive value than raw ham, and this latter, again, a higher value than boiled ham. It is not easy to satisfy one's hunger with boiled ham. In like manner, the nutritive value of boiled and of fried fish is very different. Fish-broth contains nearly the same component parts as meat-broth, and in some countries fish-soups are as much esteemed as those of meat.

In cooking vegetables a similar wasting process takes place. The water in which they are boiled contains a preponderance of potash and phosphoric acid. It has been calculated that the water in which the fish of London is boiled during one year contains 600,000 lb. of potash and 207,770 lb. of phosphoric acid; and that of the vegetables, 326,548 lb. of potash and 63,161 lb. of phosphoric acid; all of which is lost in the sewers. Vegetables scalded with boiling water before they are cooked are, owing to a portion of the nutritive salts being thus extracted, less nutritious than strained vegetables, of which, as will have been observed, we can eat much less. Roasted potatoes are more nutritious than boiled.

By a correct choice in the mixture of food the nutritive salts wanting in one thing may be supplied by some other substance which we eat. Groats and milk furnish perfect nourishment even for an adult. The nutritive value of flour may be considerably augmented by the addition of fruit, as in the north of Germany, where oatmeal soup, mixed with fruit, is a favorite dish. Thus, too, potato soup is rendered more nutritious by the addition of peas, and potato food by being mixed with cheese and curds.[†]

---

[*] It is the same as if the meat were divided in two parts, the one roasted, and the other lixiviated with water, and the two afterwards joined together. It will easily be understood that the roasted meat would not gain in nutritive value by the addition of a substance which had lost its nutritive properties. In the manufacture of the different essences of meat, the residue of the meat employed in their fabrication loses likewise a proportion of its nutritive value corresponding to the subtraction of nutritive salts contained in the essence.

[*] Professor Roloff, of Halle, published lately, in "Virchow's Archiv," a very remarkable fact relating to nutrition. He found that the foals in a breeding stud grew sick and died in great number. On examination it was found that the hay used was deficient in nutritive salts.

[†] In India rice is never prepared alone, but always with the addition of certain pulse (Cicer arietinum, Calamus indicus, Dolichos unifloras, Dolichos sinensis, Phaseolus aconitifolius, and Phaseolus mungo.) which abound in albuminates; and, as Dr. Forbes Watson informs us, the mixture is in such proportion as to correspond in nutritive value to that of unbolted wheat-flour.

Especially rich in alkalies and phosphoric acid are the fungi—mushrooms, truffles—and cabbage sprouts, the seeds of the vegetabilia, the leek, and onions. Wine must abounds most in alkalies, one litre containing 2·2 grammes of potash, and 0·5 grammes of phosphoric acid; and also the water in which asparagus has been boiled, and for this reason, and on account of its organic component parts in spring, when there is a scarcity of the juice of plants, deserves to have notice taken of it by physicians, who might apply it as a cure. To these may be added lime-juice, which in the English navy is used as a remedy for scurvy. Twenty-eight lemons yield one litre of juice, containing two grammes of potash and 0·3 grammes of phosphoric acid.

Of all substances used as food for man, corn undergoes the greatest change in its nutritive value when converted into flour. Wheat and rye corn contain more nutritive salts than meat, but wheaten or rye flour very much less than meat. The nutritive salts in meat are, however, the same as in corn.

It is clear that what is true regarding meat must also be true regarding corn, as well as for every other sort of food, and if the nutritive value of meat be diminished by being deprived of the nutritive salts, that of flour must be so too in the same proportion as it contains a less amount of nutritive salts than corn.

In 1000 parts of pure meat are contained 13 parts, in weight, of the nutritive salts; in the same quantity of rye and wheat corn, 21 parts, and in a like quantity of rye flour only 12 parts of the nutritive salts, and in wheaten flour only 7. This difference is extraordinarily great, and in the nutritive value the difference is also much greater than is generally believed. One of the most excellent French physicians, Dr. Boudens, informs us that, during the Crimean war, the Russian prisoners, accustomed as they were to a very coarse brown bread, were not sufficiently nourished by the rations of bread which the French soldiers received, and that it was found necessary to increase their rations. It is a scientific fact, which Magendie has proved by experiment, that a dog dies if fed on white bread, while his health does not suffer at all if his food consist of brown bread (bread made of unbolted flour).

All this has been said hundreds of times, but for those who are daily seated at a well-furnished table, and have a choice of dishes, the difference in their relative nutritive value, and the change occasioned in their power of nutrition by the process of cooking, is a matter taken little notice of, and at last it is thought that such difference does not really exist.

Where custom is concerned, the generality of persons are hard-headed; and only when, as on an anvil, some thousand blows have been given, is any impression made. The laws of nutrition are so simple that a child can understand them; nevertheless it will be still a long time before the general public will turn to account the knowledge which science has obtained.

The conditions are of course very different for those to whom the feeding of a whole class is entrusted; for of them it should be imperiously demanded that they at least understand as much about the nature of food as the farmer does of the fodder which he gives his ox from which he demands work, or the cow to which he looks for milk, or the sheep which is to give him wool—all of which he would fain maintain in health and good condition.

The great mass of the population is, on the whole, better provided for than formerly; wages are higher; the dwellings and the sanitary arrangements are improved, as the list of deaths shows: and yet, in spite of this, the efficiency of the male population for military service diminishes on the continent and in the manufacturing districts to an extent that is alarming. The chief source of this can be sought only in a deficiency of nourishment, the ill effects of which are especially great in youth. Then, too, there is the sitting for a long time in school in badly ventilated rooms, and the accumulated head-work, which undoubtedly act unfavorably on the corporeal development. Air is a requisite of life as much as food, and its purity is the most necessary of all conditions if health is to be preserved.

Many millions more men could be daily fed in Germany if it were only possible to persuade the population of the advantage which bread made of unbolted flour has over that ordinarily eaten. In taste and in digestiveness it is preferable; yet the attempt to introduce it in Munich failed. The servants and the charwomen refuse to eat it, and only a few families adopt it who are not disconcerted by its darker color. Children like it exceedingly, and their instinct is an excellent pledge for the nutritive value of the bread.

It is clear that we can give back to common flour the full nutritive value of the corn, if, in making bread, we add the missing nutritive salts which, when the corn is ground, pass away in the bran. It is this consideration on which the composition of Horsford's baking powder rests. It supplies the place of leaven and yeast, and in the United States of America is now in general use. It consists principally of the nutritive salts of corn (phosphoric acid, potash, lime, and magnesia), in such a form that, when mixed with the flour, carbonic acid is developed in the kneading, by which the dough and the bread acquire the porous condition which they ought to have. Bread prepared with this baking powder has an excellent flavor, and looks as well as, and is more digestible than, the usual bakers' bread.

As an example of the good effect produced on the digestion and nutrition by supplying the nutritive salts wanting in any food, I may cite the food for infants, the preparation of which I made known four years ago.

The evil effect of the much-used pap given to children, both in the country and in towns, is well known to physicians; for it is quite intelligible that good cows' milk by being mixed with wheaten flour is not improved but depreciated, because wheaten flour, on account of its deficiency of the nutritive salts, is a very incomplete sort of food.

Dr. John Zimmermann, who ninety years ago was famous as a physician, says as follows, in his work "My Experiences in Medicine," on the subject of children's pap: "Pap is a poison, the use of which senseless custom has consecrated. I know very well that many millions of children are nourished with pap, but it has also cost the lives of hundreds of thousands; and I am well aware it were easier to move a mountain than to convince a brainless woman of the disadvantages of pap. . . . . The well-known Parisian physician, Dr. Vandermonde, shares my opinion that pap is the worst food for children — the source of most of their maladies, their deformities, and death."

The same pap made fluid with malt is converted into a perfect nutriment by simply supplying the missing potash, and by a slight increase of other phosphates; and a number of facts show most indubitably that this soup, without any additional food, nourishes children admirably, and that it brings none of the evils in its train which Zimmermann so forcibly puts forward. That the good effect of it depends on the proper preparation is a matter of course.

In the preparation of all victuals, we must bear in mind that, with the exception of milk, they must, to be agreeable to our taste, possess the reaction of the gastric juice, which is acid. Most vegetable aliments — the juices of plants, the flour of the cereals, coffee, meat-broth, tea— change the color of blue litmus into red.

An alkaline food has for the adult a disagreeable, often even a disgusting taste; and hence it may, perhaps, come that the flesh of freshly slaughtered animals repugns us after a time. Meat, which the butcher says has hung long enough, always has an acid reaction; and the custom of taking lemon-juice with neutral food —such as oysters, or with others slightly acid, such as fried fish—may possibly arise from this cause.

Vegetable food and milk contain very much more earthy phosphates than meat; and the preference of children, during the period of greatest growth, for bread, puddings, and milk food, which gives most material for the formation of their bones, may be explained by this fact. Carnivorous animals eat, as is well known, a portion of the bones with the meat.

As to the effect of coffee, tea, meat-broth, tobacco, and the betel-nut on the vital processes and on the health, we have till now but suppositions. What we know with certainty is, that they are not nutritive substances, or that they do not contain them in such quantity that they— with the exception of alcoholic drinks, which also act as heat-giving matter—can be taken into account when considering the subject of nutrition. Carnivorous and herbivorous animals live without them; and it would seem, therefore, that they are not a necessary for man. Inexplicable, however, it still is, that among all the people of the old and modern world, among all the wild tribes, enjoyments of this sort, of the most different form and nature, are to be found, and that these enjoyments have grown into necessities.

The poorest factory workman imposes on himself privations in his food and other necessaries, in order to spare a few pence for tea, tobacco, or alcohol. There must be a deeper cause for this than mere custom. If by the word health we understand only the normal state of the organs and their right interaction, then all stimulants which disturb this state are hurtful. But the idea of health comprises something more. If we take a family of ten persons living in the same house, who breathe the same air, drink the same water, and enjoy the same food, their bodily state is still not the same. If in the place where the family lives an infectious disease breaks out— the cholera, for example,—two individuals possibly of the household will be attacked by it, and often not those of whom we say "they are of weak constitution," but just the stronger ones. If we overlook the newest theory, that attributes most diseases to a fungus which finds in the body of the ailing person a fitting soil for its propagation, and in others, who remain healthy, the contrary, and seek for a general term to express whatever is injurious — change of temperature, &c.—it is clear that healthy individuals oppose a greater resistance to the harmful influences than the weakly; those who remain well greater than those who are attacked.

This resistance may be compared to a force, the degree of which depends on the strength of one party and the weakness of the other. We must not confound it with the force on which the circulation of the blood, or the movement of the intestines, or the power to work, but it would seem as if we ought to look for it in the nervous system.

All stimulants, and herein is but one opinion, act on the nerves, and many of them, perhaps, in suchwise that they temporarily increase the power of resistance against outer disturbing influences. No one of them can be compared to another in its effect, for each acts, according to the state of the body and to the quantity, in its own peculiar way: many may serve quite simply to show us the state of things within. Of this inner state man knows nothing. Under certain conditions a chill is felt inwardly without the temperature of the body diminishing on that account, and warmth is experienced without there being an increase of heat. These sensations point to a state in which certain nerves throw off more warmth than they receive, or receive more than they throw off. The sensation serves only to announce an inequality, which, if it be slight and passing, can, by various stimulants, be easily removed. If it be lasting, it is looked on as a symptom of illness.

A cup of meat-broth has often a strengthening effect, not because its component parts generate strength where there is none, but because it so acts on our nerves that we become conscious of the existing strength, and sensible that this strength may be disposed of. The feeling of weakness, which is again an action of the nerves, then decreases or vanishes. In cases of real weakness the broth does not give strength.

(To be continued.)

◆

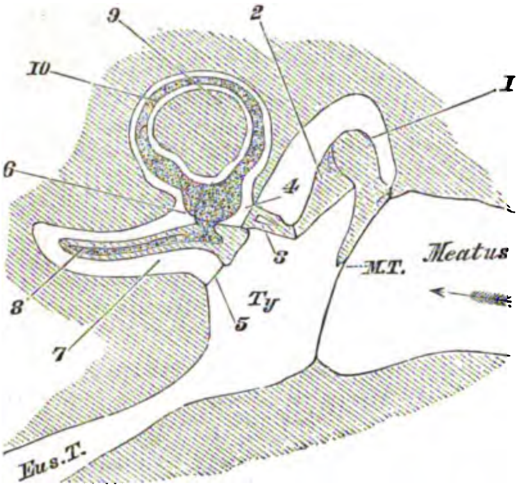
ON

SOME OF THE FUNCTIONS OF THE MIDDLE AND INTERNAL EAR, AND THEIR ANALOGIES.

By Peter Allen, M.D., F.R.C.S., Edin.

(Continued from March No.—p. 147.)

The Eustachian Tube.—The remarks which concluded the preceding paper lead naturally to some discussion of the offices and relations of the Eustachian tube. Before, however, proceeding to this, one or two observations, suggested immediately by my former reference to the tympanic cavity, will not be entirely out of place.



A diagram illustrative of the relative positions of the various parts of the ear.

M. T., **Membrana tympani;** ***Ty.***, **Tympanum;** ***Eus. T.***, **Eustachian tube. 1, Malleus; 2, Incus; 3, Stapes; 4, Fenestra ovalis; 5, Fenestra rotunda; 6, Scala vestibuli of the cochlea; 7, Scala tympani of the cochlea; 8, Scala media (canalis cochlearis) of the cochlea (the cochlea is supposed to be unrolled); 9, one of the vertical semicircular canals and its ampulla between the figures 6 and 10; 10, Membranous labyrinth. Only one of the three canals is represented.**

In considering the tympanum as a closed chamber filled with respired air, we perceive the same conditions in operation for increasing *resonance* and *rapidity* of sound-transmission as exist in the production of the human voice. The air which throws the vocal cords into vibration is urged from the lungs during expiration, and upon the degree of tension to which their proper muscles subject them depends their rate of vibration, and consequently the pitch of the emitted sound. But resonance of voice is chiefly effected by the reciprocating cavities of the larynx and mouth, by which all the fundamental tones, as well as the over-tones, are so mingled and modified as to cause a reinforcement of any particular tones desired. Upon the rapidity and accuracy with which the vocal cords can be made to change their form and tension, through the agency of their muscles, together with appropriate adjustment of the cavity of the mouth and the lips, depend the qualities of the voice; and it is by the suitable elective action of all these parts together that the human voice is rendered the most perfect of all musical instruments. Hence it follows that the vibrations of certain elastic membranes in the larynx become "modified, extended, and multiplied" by the reciprocating resonant cavity of the mouth, in a manner analagous to that in which those sonorous undulations are acted upon which strike upon the membrana, and enter the cavitas tympani. It may also be conceived that the mastoid cells, presenting so considerable a surface for reflecting sounds, may exercise functions resembling those of the cells and sinuses of the nasal fossæ: without doubt, the qualifying powers of the oral and nasal cavities, materially assisted also as they are by the lips, far exceed those possessed by the tympanum and mastoid cells; but not the less are these analogies deserving of attentive consideration.

Another not unimportant effect of the tympanic air having acquired a degree of heat which it could not have obtained by mere rapid passage along the nasal cavities is, that the velocity of sound becomes somewhat augmented in travelling through the tympanum.

In connection with the subject of the foregoing remarks, the reader may find further expositions most correctly given by Dr. Jago, of Cornwall, in his recondite essay on the Functions of the Tympanum. Although I am unable to agree with him in the whole of his views regarding the mechanism and physical actions of those parts of the hearing apparatus of which he treats, I most unhesitatingly bear testimony to the value which his researches possess in all that concerns acoustic physiology. Dr. Jago gives his personal experience of occasional derangements of the faucial structures which were attended by patency of the right Eustachian tube; and the phenomena which ensued from an open tube are carefully detailed. His observations are peculiarly interesting to me at the present time, corroborating as they do the results derived from similar inquiries regarding the functions *normally* performed by the Eustachian tube when rendered patent by the action of its own muscles. By experiments upon myself, and with the assistance of a well constructed tympano-manometer, which will exhibit slight movements of the membrana tympani when excited by quite moderate currents of air passed into the drum through the Eustachian tube, I can produce several of the manifestations which Dr. Jago considers as appertaining to pathological changes alone. As there is perhaps no point in the whole range of aural physiology upon which authors more widely and persistently differ than on the condition and uses of the Eustachian tube, it will be a great satisfaction should it be in my power to contribute any facts that may lead to a more exact determination of the state which the tube naturally presents.

In the first place, I would observe that Dr. Jago appears incredulous as to anyone being capable of *voluntarily* opening his Eustachian tubes. He writes: "J. Müller (Physiology, translated by Baly, p. 1264) speaks of an abnormal state which he could beget in his own ears by 'elevating the palate,' when a 'buzzing sound is produced in the ear, and the sound of one's own voice by this means acquires the intensity of the tones of an organ.' From this description one would be led to imagine that he could voluntarily open his Eustachian tubes whilst breathing was proceeding; a feat which I cannot perform, though by some contraction of the palate I can help to keep open the tube when it is already dilated.

I demonstrate that occasional patency of the tube may be created through the means of muscular contraction, by placing the tympano-manometer air-tight in the external auditory meatus, and noting the effect produced on the colored fluid contained in the instrument during respiratory movements, with the tensor and levator palati and posterior palate muscles fixed and made tense. At every inspiration, I not only feel but I *see* that the air is drawn from the drum, and that its membrane vibrates, by the slight falling of the manometrical fluid. At every expiration, I am convinced that the breath enters the tympanum and pushes its membrane slightly outwards, as evidenced by a corresponding rise of the fluid in the manometer. The sound, too, of the circulating air is heard intensified in the tympanic chamber; and if a continuous humming be maintained, the voice does, as Müller describes, almost acquire the loudness of an organ.

In tranquil respiration, when the muscles, thus experimentally invoked to action, are at rest, all these signs are absent, as has been explained in my previous paper. These acoustic manifestations agree, in the main, with those experienced and indicated by Dr. Jago when himself suffering from patency of the Eustachian tube.

The act of *yawning* is another movement, accompanied by deep and spasmodic inspirations, in which the Eustachian tube again becomes opened by its muscles. It is, however, to be noted that no oscillatory motion of the air in the now previous tube and tympanic cavity occurs during the performance of this action in the ordinary manner; because the intrusion of any portion of the large aërial current is prevented by its being immediately sucked into the trachea from the gaping cavity of the mouth while the glottis is raised. If an attempt be made to inspire through the *nostrils* while the palate muscles are in a state of spasm, a condensation or rarefaction of the air—sometimes the one, sometimes the other—will ensue in the tympanum. The opinion, now (as I believe) for the first time advanced, that the guttural orifice of the trumpet is drawn open during the few moments occupied in yawning, is supported and confirmed, I think, by the circumstance that the performance of this act will cause to disappear the sensations which are produced by either of the following well-known experiments:—

1st. By the method of Valsalva, which consists in an attempt at inflation of the tympanum by a forcible expiration through the nostrils while they are closed, as in energetically blowing the nose. A sense of fulness or tension is experienced in the drum, arising from pressure of air against the inner surface of the membrana tympani, which will remain until the Eustachian tube be made patent.

2nd. By a forcible inspiratory effort made with the nostrils and mouth closed, producing an excessive rarefaction or exhaustion of air. In this case also an immediate removal of the unpleasant sensation, occasioned by atmospheric pressure on the external surface of the tympanic membrane greater than that which exists on the inside, is effected as well by gaping as by swallowing.

3rd. By Toynbee's method of proving that the Eustachian tubes are shut during the state of repose, and that the act of deglutition opens them. Although his proposition that they are *only* opened during this process cannot be maintained, it must be unequivocally admitted that it is the readiest and most easily performed movement for opening their faucial orifices.

I must not be supposed to acquiesce in the physiological reasoning by which the late Mr. Toynbee arrived at his conclusion, that by swallowing with the mouth and nose closed, "air was pressed into the tympanum, and only passed out again during the same act with the nostrils open; and that, in many instances, the membrana tympani is seen to be pressed slightly outwards by the first act," viz., swallowing with nostrils closed, "and to return to its previous state during the second," viz., swallowing with nostrils open. On the contrary, I most emphatically deny that air-*condensation* can possibly result from a simple act of deglutition with the nostrils closed. I admit that an *alteration* of air-pressure does ensue, but its precise physiological meaning, as derived from manometrical observation and inspection of the membrana tympani, must be left for description in a following paper.

In all the foregoing experiments, repeatedly performed on myself, I have always found the act of yawning relieve the degree of condensation or rarefaction of air in the tympanic chamber equally well with the act of swallowing; and that it does so is owing to the Eustachian tubes being rendered patent by the contraction of their muscles in the operation. The peculiar "clicking sound accompanying their action in opening the tubes may be heard if listened for.

(To be continued.)

ON RUPTURE OF THE VAGINA IN LABOUR.

By J. Braxton Hicks, M.D., F.R.S.,

Lecturer on Midwifery at Guy's Hospital, Examiner in Midwifery at the University of London, etc.

The recent case* of total severance of the uterus, the placenta being still within it, from the living body, shortly after the delivery of the child, has, as might be expected from its rare occurrence, attracted much attention in the profession and excitement out of it. It has been considered by those without, that such an abstraction of the womb could only be affected by great violence; and this is probably the most natural impression the accident would create on those who have not studied medicine. But from remarks I gather from some within the profession, there seems to be a want of clear appreciation of the forces which may produce rupture of the vagina; and this deficiency is to bo found in most, if not in all, of the works on the subject.

Let us therefore consider this point for a few minutes. It is well known that when the womb acts normally after the opening of the mouth, if no obstacle interposes, the contractions drive the child through the passages, itself following closely in contact, and thus the child is born, after which, the contractions still continuing, the afterburthen is expelled, assisted by bearing down or external pressure.

But suppose the mouth of the womb does not open, while the contractions still remain powerful, what is the result? Either the womb fails to expel, the patient dying from exhaustion, or, very rarely, the putrid fœtus remaining within, tolerated by the system; or, if the tissue be unable to bear the enormous power of its own contractions, a rent occurs in some part according to the relative strength of the parts. Not unfrequently this rent commences at the edge of the rigid mouth, in which case it extends upwards into the body of the womb and downwards into the vagina a varying distance in a more or less perpendicular direction. All this time there is no particular tension on the vagina.

---

* Regina v. Popplewell.

But the case is different if the head of the child have escaped the mouth of the womb as far as the neck, and have met with opposition from the bones of the pelvis, the contractions still being active. The child now becomes a fixed point, and the tendency of the force of the womb is, according to a simple mechanical law, to act in the opposite direction—that is, to glide itself off the child upwards to the fundus. This it would of course do immediately, were it not prevented. What then restrains it? First the vagina, and this yielding, the ligaments with the cellular tissue. Primarily the strain is on the vaginal walls, the tension being increased by its distension by the head. If the vagina is short, as in some persons, then the tension is rapidly felt, especially if the womb is at all oblique, as in the ordinary English position for delivery. If, then, any part of the vagina cannot bear the strain of the uterus driving itself backward, it gives way, and as we should *à priori* expect, in the transverse direction. Supposing the womb to be placed obliquely, the rent will probably be on that side to which the head inclines; and the womb, being now released, draws itself off the child, being attached to and held by only a portion of the vagina; so that when it has, as one may say, expelled itself off the child, it sinks down again towards the pelvis, on that side, of course, on which the vaginal wall remains entire; the child remaining with its head in the lower part of the passage, the rest of the body passing through the rent. Such a case I have myself seen, strongly exemplifying the mode by which the womb produces this accident. But if, instead of an obliquely placed womb, we have it quite in the middle line, as in the continental mode of delivery, then its force will be felt equally on either side, and it is quite possible to conceive that the vagina might be torn throughout, or nearly so, and so extensively that the strain would fall on the ligaments. Let us imagine these latter not stronger relatively to the womb's power than was the vagina; is it at all out of probability that these would also give way—at any rate, to such an extent as to permit the completion of their severance by a little extra drawing down, as by forceps, coughing, or violent sickness? The ligament which principally resists the backward force of the womb, after laceration of the vagina, is the round one. The broad ligaments possess at full term of pregnancy so little substance that they may be virtually excluded, being rather a medium for the support of plexus of blood-vessels. If these round ligaments were delicate in such a case as above suggested, then the womb might as readily tear them as it did the vagina. Indeed, although the whole attachments acting together keep the womb in place, yet, one of them having given way, the remainder will follow with but little difficulty. In ordinary labour the vagina receives support from the abdominal parietes and the diaphragm, by their action preventing in a measure the backward tendency of the womb.

Now, this transverse rupture of the vagina is not so rare as is generally supposed; for instance, Dr. Collins, in his "Practical Treatise on Midwifery," mentions a considerable number of cases; and they can be found in most authors. I have seen two cases within a few years. Sometimes the rent is at the point of junction of the womb with the vagina, sometimes just below, sometimes just within the cervix; but they all owe their origin to the same force. The extent of this rent varies much. Dr. Collins mentions one case in which it was 4½ inches long. This must embrace a large amount of its circumference. In those cases in which the fœtal shoulders have passed through it must always be very considerable. Dr. Ingleby ("Obstetric Medicine," p. 185) says: "*The rent is usually more or less oblique, sometimes including nearly its entire circumference, and thus virtually dissevering its connection with the uterus.*" The fair consideration of these facts will, I think, prepare us to receive as a possibility that the womb may be so nearly severed from the vagina by action of the womb alone as to require only a little force more to detach it altogether. That serious symptoms will *necessarily* occur at first with fatal rupture of the vagina, is contrary to the statements of authors and of my own experience. Nor is it necessary to have external hæmorrhage. In one case I saw, although the child had passed through the rent, there was no external bleeding until after delivery, the occupation of the vagina by the head preventing its flow. When the head has passed the external parts, then we find it of a mixed character—dark, bright, and clotted.

If we refer to the evidence at the various trials of the case above alluded to, we shall find that after the patient had been in labour for twenty-four hours, the medical man remained with her, and finding at the end of three hours she was becoming exhausted, he thought it proper to use the forceps. The pulse was already 120 per minute, and she was plied with some stimulants, the pains becoming less powerful. The forceps were applied in the continental position, and, upon traction being made, they slipped with some degree of rebound. Upon their reapplication the child was delivered alive without special difficulty. A quantity of mixed blood flowed, with, I am informed, some clots. The patient then fell into a very faint state. She was moved up higher on the bed; secale and stimulants were given. Pressure on the abdomen was made, and there was not very much loss after that which directly followed the delivery. After waiting about half an hour, the medical man made gentle traction on the cord (I am told without passing his thumb into the vagina), assisted by external pressure, and to his surprise the womb came down wholly detached. The patient lived but a short time after. The nurse had taken the baby into the other room to wash it, and the other person in the room besides the assistant was unversed in attendance on labours. So that, apart from the fact that the womb was detached from the body, there was no witness of force having been used by the medical man. Much stress was laid at the inquest as to his calling the mass a tumor; but into this question I do not enter, because in such unusual circumstances it would be difficult to place any such expression as a proof that undue force had been employed under a mistaken notion of its nature. Under these circumstances we must accept the case simply as one where the womb has been separated from the living body, and here we must endeavor to find out how such a circumstance could take place.

Let us, therefore, further consider in what manner the womb can be torn from the body during or after labour. If the mouth of the womb be not properly expanded, and rigid, and the forceps introduced within, and then traction be made, it is possible to conceive that, if the pelvis be large enough to allow the head to descend with the extra thickness of the womb round it, the whole might be drawn out together, and, if sufficient force be used, that the vagina might be torn off. But in this case, of course, the child would be covered by the womb. This accident might also occur if the forceps passed outside the womb, and so draw both down together within its grip; and still more, if the blades passed through the walls of the vagina at its junction with the womb. When the womb has expanded over the head, this cannot occur; nor do I find a record of any case where the uterus has been brought away after the severest traction by the forceps. It has been injured, but not drawn down, being prevented apparently by the close contact of the head to the bones of the pelvis.

The womb can also be removed from the vagina after inversion. Such cases occur from time to time by ignorant persons pulling at it, and in some instances recovery has taken place. But here the womb would be inside out, and would itself afford a hold to pull at.

Again, another mode by which we can imagine the womb to be detached from the body is by forcible attempts to push the hand into the womb while the mouth is firmly closed, whereby sufficient tension may be put on the vagina as to rupture it, and then on the ligaments; but such a mode would require very great force, such as would be apparent to bystanders. The force required could be tested on the dead body. To effect it at least the hand and the forearm would have to be introduced.

Again, another way has been suggested—namely, during the removal of an adherent placenta. Here again the arm must be introduced, and the walls of the womb seized hold of in some kind of way. But this is not an easy matter; because it is next to impossible to drag it down from within so as not to invert it. The os and cervix are generally in a flaccid state, simulating the vagina, so that it is almost if not quite impossible to get a hold sufficient to retain it during traction. Then the uterus must be brought out before the vagina would entirely give way, and the force employed mostly at the end of the operation. This would be such a formidable affair that, supposing it possible, it is clear no man in his right senses could get half way through it without consciousness of his mistake.

But it would be easier to do it if the vagina were largely ruptured previous to the passing in of the hand; no doubt it could be seized more readily, and abstracted without so much force. Here again the hand and arm must be introduced; and as there is already a greater or less lesion of the tissues, it indicates a greater or less amount of tenderness of the tissues, and is not widely different from the supposition thrown out at commencement, excepting that the ligaments are torn by hand-traction instead of by the natural forces. And the relative amount of either force required depends on the amount of previous laceration; and therefore the amount of blame to be thrown on the practitioner depends on the same conditions—in all cases very much less than where no previous laceration had existed.

I do not mention traction on the cord as a means of detaching the uterus, because it is clear that the funis would give way long before any impression was made on the integrity of the tissues.

In the case under consideration, it is clear that the first mode will not give an explanation, for the womb was not over the child at birth. Neither can we admit the second, because the womb was not inside out. Neither can we recognize the third—that of pushing it off to introduce the hand,—because the arm, as far as we can hear, was not introduced sufficiently far; and, secondly, the dangerous state of the woman, after the child was born, points to a time before the delivery of the placenta for the reception of the injury. For this latter reason we must, I think, remove the fourth mode from the causes likely to produce the accident—at least as regards the principal injury. If manual traction had been used, it must have been of the slightest; for there was no evidence of it, beyond the fact that the patient asked time to be given her—a very common request after and during severe labour.

In the above remarks, I have not taken into account the facility for rupture given by tender and feeble tissues. There was evidence to show that the patient, at least, was not in the most tonic state; and that, with a small cavity in the lung, there were many adhesions of the pleura. Her rapid decomposition precludes one from knowing accurately what influence this had upon the rupture. Be this as it may, we know the womb was detached, and that in the natural forces we find a certain explanation of a large proportion of the laceration, and a high degree of probability that the remainder was likewise accomplished by the same means; while we have, to my mind, a more difficult task if we suppose that the remainder was forcibly detached by the medical attendant under the circumstances; and this difficulty is increased by the fact that he was shown to have been careful and attentive in the case, perfectly sober at the time, having been engaged for many years in active midwifery, and having performed most of its operations; these things rendering it less probable that he would have done so wild a thing as that he was accused of. The history of the case indicates to my mind that a rupture of the vagina had occurred previous to the use of the forceps—in fact, being the cause of the symptoms requiring their employment; that the laceration was increased or nearly completed during their use, aided much by their slipping, so that by the time the child was born the severance was nearly complete; that of the blood which then flowed, some had been detained in the peritoneal cavity, and some was freshly flowing (this will readily account for the stain of the peritoneum); that the pressure on the abdomen and the traction on the cord completed the severance. The congestion of the broad ligaments alluded to at the trial is a natural appearance; and if it were not, it would rather point to the existence of an injury some time prior to death, than one a few minutes before. The separation of the womb in the living without inversion is very rare, of which it is difficult to find an authentic instance. It is not, therefore, a case to prejudge; for if as some have supposed, it is a very easy thing to imagine it done by improper force, how has it happened that it is so rarely recorded? It is manifestly our duty to examine carefully so rare an instance; and, where two powerful forces are present—uterine pains and the hand—to closely scrutinize the evidence, recollecting that the womb has an energy quite as formidable, if employed adversely, as it is valuable and indispensable, when exerted rightly.

St. Thomas-street, S.E., Jan. 1869.

BRIEF REMARKS ON

SOME OF THE FORMS OF DISEASE OBSERVED DURING AND SINCE THE LAST UNUSUALLY FINE SUMMER.

By Thomas B. Peacock, M.D., F.R.C.P.,
Physician to St. Thomas's Hospital, etc.

The past summer has been very remarkable for its extreme warmth and dryness, and it might naturally be expected that so unusual a season should exercise an obvious influence on the forms of disease prevalent during its continuance, and since it has been succeeded by cold and wet weather. In this paper I propose to offer brief notes of some of the affections which have fallen under my own observation, prefacing them by some account of the weather, and of the amount and causes of mortality, derived from the Registrar-General's weekly and quarterly returns.

Mr. Glaisher's reports very decidedly show the exceptional character of the season. He states that the first eleven days of the year were cold, but after that the temperature rose above the average, and continued so throughout the winter, spring, and summer. In the quarter terminating March 31st the exceptions to the excess of heat were few in number and small in amount. Altogether the daily excess averaged, in the 80 days, 3½°. The fall of rain in the first month was 2·4 inches in excess; in the other two months 0·3 and 0·5 inches in defect; the total fall being 6·6 inches. The month of March, though warm, was not remarkably so. The mean temperature was 48°, or 2.2° above the average of 91 years. The mean temperature of May was 57·3, or 4·8°, and of June 62°, or 3·9° in excess. Altogether, the weather during the quarter terminating June 30th was fine and warm, the temperature for the 91 days being 3·1° above the average, and some very hot days having occurred. The highest temperatures recorded were on June 19th (87°) and on June 13th and 14th (85°). The fall of rain was 0·4 inches in excess in April, and 0·5 and 1·5 in. in defect in May and June; the total fall in the quarter being 4·3 in. The month of July had a mean temperature of 67·5°, or 6·1° above the average; of August, 63·6°, or 2·9° above; and of September, 60·5°, or 4° above; and the excess in the entire 92 days was nearly 4°. The heat was also excessive on some days, as on July 22nd, when the temperature in the shade reached 96·6°, and on the 20th and 28th, when it was 90°; on August 5th it was 90·5°, and on September 7th 92·1°. The mean temperature of the three months was 63-9°, or nearly 4° above the average—a higher mean temperature than had been attained in any similar period for 98 years. The fall of rain was 1·3 in. in defect in July and September, and 0·1 in. in excess in August; the total fall in the quarter being 5·1 in. Of the 263 days, from the commencement of the unusually warm weather on Jan. 12th, to the termination of the quarter on Sept. 30th, the temperature exceeded the average by 3¼°; and in no season since 1771 has the excess been so large for so long a period. The weather was also remarkably fine, the fall of rain for the three months having amounted to only 15·9 in., or 2·3 in. less than the average; and the unusual heat obtained in the night as well as during the day.

On the last day of the quarter there was a change of weather; the temperature fell slightly below the average, and there was some rain, and the weather was cold and wet during the first few days of October. On the 2nd the temperature was 2·9° below the average; on the 3rd, 8·1°; and on the 4th, 3·3° below. There was then a rise, so that for two days the temperature exceeded the average, after which it again declined, and there was a fall of rain. On the 18th the temperature was 7° below; and on the 19th, 4·1°; on the 20th, 12·1°; on the 21st, 5·3°; and on the 22nd, 5·4°. A slight rise then took place, after which the temperature again sank, so that on the 24th it was 7° below the average. The cold continued till the last day of the month, when the thermometer again rose to an excess of 6°. The mean temperature of the month was 47·9°, and the fall of rain 2·61 in.; the temperature being thus 1·6° below the average of 96 years, and the rain ·19 in. in deficiency. Thus, after a period of nearly nine months of remarkably fine and warm weather, and for a considerable part of this time of very hot and dry weather, a sudden change occurred during the month of October to a very unusual degree of cold and a full fall of rain.

On comparing this statement of the weather with the mortality in the metropolis during the several weeks from that ending April 4th to that ending Oct. 31st, it appears that at the earlier part of this period, or till the week ending June 20th, the mortality continued below the average, the deficiency in that week being 22. In the following week, however, it rose above the estimated mean to the extent of 150, and continued very high throughout July and August; only again falling below the average in the week ending Sept. 12th. After remaining low for two weeks, the estimated number was again exceeded on Sept. 26th, after which there was a fall in the following week, to be succeeded by a very large excess continuing till the end of October. On looking more closely into the cause of this excess, from June 27th to Sept. 5th inclusive, it will be found that it is chiefly in the zymotic class of diseases. Indeed, while at the earlier part of the period the deaths from this class of causes were below the estimated number, during the hot weather they very considerably exceeded it, and continued in excess till the end of October. The excess also is obvious in the different forms of zymotic disease, but to a much more marked degree in diarrhœa and choleraic affections than in any other; and it especially shows itself among infants and young children. In the month of October the excess of deaths from diarrhœa &c. disappears, but there is still an unusual fatality from fever, and especially from scarlatina and diphtheria. The excess of mortality during the hot weather, though most striking in the zymotic affections, was by no means limited to that class of diseases. Thus the deaths from cerebral affections were considerably in excess during the whole period from April 4th to October 31st, and especially so during the very hot weather in the height of the summer. Diseases of the respiratory, circulatory, and digestive organs were also more fatal than usual during the same period; and the increased mortality showed itself rather in consumption than in the acute forms of pulmonary affection, bronchitis and pneumonia. All forms of diseases of the respiratory organs, however, showed a very marked increase after the commencement of the cold and wet weather of the autumn. The forms of disease which fell under my own notice, and which appeared to be more prevalent than usual during the summer or in the autumn, or which were apparently more or less influenced in their characters by the unusual season, were—

1st. Sudden seizures of a cerebral or cardiac character. Acute cerebral attacks, though they occurred occasionally in the metropolis, were apparently more common in the country. Several cases of the kind occurred at St. Thomas's and in private practice. They generally commenced with a sense of heat, weight, and fulness in the head, followed by dizziness and pain, and frequently by unconsciousness, with or without convulsions.

Two very characteristic examples of sunstroke were admitted under Dr. Bennett, which have been reported by Mr. Churchill, the medical registrar. In one of them, a man, twenty-eight years of age, was much exposed in going about town in search of work. On Aug. 5th, after walking part of the way to Norwood, he fell down unconscious, and was taken to the hospital. When admitted he was much prostrated, and complained of severe pain in the head and tingling in the extremities, and was languid and dull. Soon after he had a slight fit. The symptoms subsided in two or three days, so that he was convalescent after he had been in the hospital about a week.

In the other case, a female, aged sixteen, went down to Ramsgate on Aug. 3rd, and after arriving there she suddenly felt chilled, had numbness of the hands and feet, and became unconscious. She soon recovered, and was able to return to town, but felt giddy, had severe headache and restlessness, and again became unconscious, and was admitted in that state into the hospital on the 5th. After being about a week under treatment she rallied to a considerable extent, but continued to suffer for some time from fullness and pain in the head and feverishness.

The attacks in both these cases were probably conduced to by prolonged want of food. The days on which they occurred were very hot. On Aug. 3rd the temperature at Greenwich attained a maximum of 81·5° in the shade and of 158° in the sun; and on the 5th the temperature was 90·5° in the shade and 162° in the sun.

In another case, which I saw in consultation with Dr. Campbell, of Marquess-road, Canonbury, exposure to the sun appeared to have acted as the exciting cause of an attack which ran on into typhoid fever. A gentleman, forty-five years of age, left his home on the 1st August, at 1 P.M., to make some business calls, in perfect health; and returned in about two hours, complaining of intense pain in the head. He kept his bed nearly the whole of the next day, and was somewhat relieved; but on the 3rd the headache returned more severely, his face became much flushed, the eyes suffused, the tongue furred, the skin dry, and the pulse quick, and he complained of general pains and inability to walk. On the 11th diarrhœa set in; on the 12th a petechial eruption appeared about the chest; and he sank into a typhoid state, and died on the 21st.

In other cases the attacks took the form of epileptic seizures, in persons who had not previously had epilepsy. In one case which has been under treatment at St. Thomas's during the whole autumn — the patient, a girl of about twenty-two, was seized while working in a hot kitchen two days before admission, and was found paralyzed on the right side, partially comatose, and incapable of speaking. She has not had any repetition of the convulsions, but has been liable to severe attacks of headache, with flushed countenance and feverish symptoms, at intervals, and there is still slight remains of the paralysis. One of the most curious cases which I saw during the summer was that of a female, aged fifty-nine, whom I attended with Mr. Goff, of the Westminster-road. She first suffered from a severe attack of colic, from which, however, she had to a considerable extent recovered, when, after having been somewhat excited by seeing visitors the evening before, she was found in the morning partially insensible. When I saw her, on the 14th July, she was capable of being aroused sufficiently to protrude her tongue, the pupils acted naturally, and she was able to swallow and was not paralyzed. She passed water unconsciously, and there was at first a suspicion that she might be laboring under albuminuria; but the urine, when removed by the catheter, contained a mere trace of albumen, which, as it was alkaline, was probably due to vesical irritation. Attempts were made to arouse her by stimulating enemata and blisters, and by the exhibition of support, but without effect; she became more decidedly comatose, and died nine days after I saw her, or about three weeks from the commencement of the symptoms.

Cases of sudden death, which apparently depended upon arrest of the action of the heart, were also of occasional occurrence during the hot weather. One of these attracted much attention at the time, and was reported in the public papers. A gentleman, fifty years of age, a member of the London Rifle Brigade, was much exposed during the Windsor Review on the 25th of August last. He was on the ground from two o'clock in the afternoon till seven or eight in the evening; and, during this time, could not have had any refreshment, except from a flask which he had with him. About the time mentioned, he complained to his commanding officer that he felt much oppressed; but the battalion being almost immediately after ordered to fall in, he took his place, and marched on. About an hour afterwards, he suddenly fell forward, the rifle dropped from his hand, and when his comrades attempted to assist him, he was found to be dead. In this case there can be no doubt that death ensued from syncope. His medical attendant, in a report to an insurance office, stated that he had not been consulted by him for any serious illness; and I examined him for the company about a year before his death, and did not hesitate to report him as an insurable life. The day on which the review took place was a hot one. The temperature in the shade at Greenwich was 70·4°, and in the sun 135°. In this instance there seems no reason to suppose that there was any serious defect about the heart before the attack; but instances of sudden death, in persons whose hearts were previously diseased, were not of uncommon occurrence during the hot weather. Such cases occurred both at St. Thomas's and the Victoria-park Hospitals; and the death of a cyanotic boy, a patient of Mr. Gaskoin, whose heart I had the opportunity of exhibiting at the Pathological Society, apparently resulted from the exhaustion caused by the heat of the weather. Very recently I have seen an interesting case in which cardiac symptoms came on in a gentleman, a farmer, residing in Sussex, while out in the fields in the middle of the day, about the beginning of July. He was suddenly seized with a peculiar sensation in the region of the heart, followed by palpitation, and became so faint that he with difficulty could avoid falling. The symptoms had continued at intervals up to the time of my seeing him. He then complained of uneasiness in the region of the heart; palpitation increased by any exertion or excitement, and some shortness of breath. On examining the heart, it was found to beat with undue force; but the sounds were natural.

2nd. As might naturally be expected, cases of biliary derangement were of common occurrence during the hot weather. Several cases of jaundice, apparently dependent on hepatic engorgement, were admitted into St. Thomas's; and slight feverish attacks, often also connected with intestinal and hepatic disorder, were prevalent. Cases of specific fever, typhus and typhoid, occurred during the time, but not, in the hospital practice, more frequently than usual. In these cases, in addition to the usual eruptions on the skin, roseolus, lichenous, and miliary eruptions were very common, and occurred in a more marked degree than usual. In some cases, also, the skin, instead of being dry, continued profusely perspiring throughout the whole duration of the disease. The attacks of typhoid also commenced more abruptly than usual, and very rapidly attained their height, so that the prostration of strength became great even at an early period. The disease was not, however, more fatal than usual, though one case terminated unfavorably on about the fourteenth day, and the mucous membrane of the bowels displayed the usual sloughs and ulcers.

3rd. During the summer several cases of acute albuminuria also occurred, not connected with the eruptive fevers, but arising from checked perspiration in persons who were following laborious occupations, who had been engaged in athletic sports, or who exposed themselves in the evening after very hot days. Since also the hot and dry weather of the summer has been succeeded by the cold and damp autumn, cases of acute congestion of the kidney, giving rise to albuminuria, have been unusually common, and have occurred both independently and during the course of febrile diseases, as typhoid and rheumatic fever, as well as after scarlet fever. In one of the former class of cases, which occurred in the height of the summer, the lungs and heart became involved, and the patient, a lady, very rapidly died. In another case during the autumn, a girl, seventeen years of age, who had dropsy after scarlet fever when nine years old, died very quickly, and the kidneys were found cystic and contracted, and intensely congested. In other cases the symptoms readily subsided.

4th. The most remarkable result, however, of the unusual season which we have passed through, is the great prevalence of acute and subacute rheumatic affections, which was first noticed towards the end of September, increased during October, and still continues. Between the 16th of September and the 2nd of November, more than twelve cases of this description were admitted under my own care at St. Thomas's Hospital: while in the three previous years the cases received during the same period into my wards were only one, three, and five. Nor is this unusual number of admissions merely accidental. All the other physicians have equally had a large number of rheumatic cases under treatment. The medical registrar, Mr. Churchill, has obligingly furnished me with a return, from which it appears that the admissions with different forms of rheumatism, between the 10th of September and the 31st of October of last year, amount to 37, while in the corresponding period of 1867 these admissions were only 19, and in 1866 they were 25. The Registrar-General's reports equally show that the more acute forms of rheumatism have been unusually prevalent during September and October, the number of deaths registered as from rheumatism and pericarditis being considerably above the average. The cases which I have seen, though fully warranting the term rheumatic fever, have been all of the subacute description; the temperature has not been very greatly increased, and the febrile disturbance not very marked. The tendency to perspiration has, however, been somewhat greater than usual; lichenous and miliary eruptions have often appeared on the skin; and, as before mentioned, occasionally the urine has contained, at the earlier periods of the attacks, a small amount of albumen. I am not able, from my limited experience during so short a period, to say whether in this epidemic the proportion of cases of cardiac complaint has been greater than usual. I have, however, met with several cases both in hospital and private practice in which the attacks were complicated with pericarditis, with or without endocarditis; but I have not seen any case in which endocarditis occurred alone. This is in accordance with previous experience, that pericarditis occurs rather in the cases of rheumatic fever of slight severity, while endocarditis is chiefly met with in the more intense cases.

Finsbury-circus, Jan. 1869.

PAPERS ON THE THERAPEUTIC ACTION OF DRUGS.

By Sydney Ringer, M.D.,

Professor of Therapeutics at University College, and Physician to University College Hospital.

I.—ACONITE AND ITS PREPARATIONS.

Of all the drugs we possess, there are certainly none more valuable than aconite. Its virtues by most persons are only beginning to be appreciated, but it is not difficult to foresee that in a short time it will be most extensively employed in the diseases immediately to be noticed.

As external applications, the liniment or ointment is used to relieve pain. They appear to possess power over pain of different kinds. In the neuralgias of the brow or face these applications are sometimes of the greatest use, and often relieve, either permanently or temporarily, the distressing pain of these complaints. But while in many instances their effects are immediate and permanent, yet it must be confessed that in the majority of cases the pain is unaffected. Neither can we, with our present knowledge, predict with any certainty the cases in which the application will be useful, or those in which it will fail. This much, however, is ascertained, that those neuralgias which depend on decayed teeth or diseased bone, or on tumors pressing on the nerves, are beyond the control of aconite. But these are not the only forms of neuralgia over which aconite cannot prevail. No doubt in some instances the failure can be explained by the badness of the preparation; but even when this is excellent, it is not uncommon for the pain to remain unabated after the application. As, however, no harm can possibly follow their employment, they should always be tried; and if unsuccessful, then recourse can be had to other modes of treatment. If aconite succeeds at all, it will succeed at once; and hence, if no relief is speedily obtained, it is useless to continue its employment. The preparation should be sufficiently strong to produce decided numbness and tingling in the skin over which it is rubbed; and, where of service, these sensations replace the pain, which does not return when the effects of the aconite have worn off.

The ointment and liniment should be applied with friction, which greatly heightens their activity. Of the ointment, a piece the size of a pea or bean should be rubbed into the skin till it has disappeared. Care should be taken while using these powerful and poisonous applications that they are not rubbed into wounds or cracks of the skin, nor brought into contact with absorbent tissues, such as mucous membranes and the conjunctiva of the eye. Spinal irritation and intercostal neuralgia may in many instances be removed by aconite ointment, and sciatica sometimes yields to the same remedy. The former complaints are better treated by the belladonna preparations.

When employed internally, the following sensations are experienced, the graver appearances and symptoms occurring only when a considerable dose has been taken. There is first a feeling of warmth at the pit of the stomach, with sometimes nausea and vomiting. The feeling of warmth spreads over the body, and there is soon perceived tingling of the lips and tongue and adjoining parts; the uvula with the tongue feels as if it were swollen, and too large for the mouth, and deglutition is frequent. If the dose has been a large one, the tingling and numbness are felt in the tips of the fingers, and thence spread over the whole body, and are accompanied by diminished sensibility and some muscular weakness, which, if the dose is a considerable one, becomes extreme, and is one of the most prominent and important symptoms of the drug.

On the circulation and organs of respiration its action is most noteworthy. With moderate doses the number of the heart's beats are much lessened, and may sink to 40 or 36 in the minute. After a larger and dangerous dose, the pulse rises in frequency, and may become irregular. With some persons such irregularity follows even a small quantity of the medicine. Whether the frequency be increased or lessened, the pulse always loses strength, and hence the circulation is retarded. The effects on respiration are very similar. By moderate doses the breathing grows slower; but after large and poisonous quantities it is often short and hurried.

During the administration of aconite cutting pains are often complained of in the joints and other parts of the body, and there sometimes breaks out on the skin an eruption of itching vesicles. Delirium occurs in some cases, but often after fatal doses the mind remains clear to the last. In some cases which have ended in death there has been found blindness, and deafness, with loss of speech.

When death is produced by this drug, the muscular weakness is extreme, and frequent faintings occur. Death from aconite appears to be due to syncope. On account of its power to diminish sensibility, aconite has been used internally in various painful diseases; but other remedies have, for the most part superseded it for the relief of pain.

It is on account of its power to control inflammation and subdue the accompanying fever that aconite is to be the most esteemed. The power of this drug over inflammation is little less than marvellous. It can sometimes at once cut short the inflammation. It does not remove the products of inflammation when these are formed, but, by controlling the disease, it prevents the formation of these, and so saves the tissues from further injury. It is therefore in the early stage of inflammation that the good effects of this plant are most conspicuous; still, although the disease may have progressed to some extent, and have injured the organs by the formation of new and diseased products, while the inflammation is extending aconite does good. It is useful wherever there is acute inflammation of any tissues of the body. The good it accomplishes can be shown both by the amelioration of the symptoms, and, still better, by the changes it effects in the inflamed tissues when these are visible, as in pharyngitis, tonsilitis, &c.

As might be expected, the results of aconite are most apparent when the inflammation is not extensive, or not very severe, as in the catarrh of children, or in tonsilitis, or in acute sore throat. In these comparatively mild diseases, especially if the aconite be given in the earliest stage of the inflammation, when the chill is still on the patient, the following consequences will very generally be witnessed: In a few hours the skin, which before was dry, hot, and burning, becomes comfortably moist; and, in a little time longer, it is bathed in a profuse perspiration, which may be so great that drops of sweat run down the face and chest. With this appearance of sweat many of the distressing sensations—such as the restlessness, chilliness, or heat and dryness of the skin—are removed. At the same time the quickened pulse is much reduced in frequency, and, in a period of twenty-four to forty-eight hours, it and the temperature have reached their natural state. It is rare that a quinsy or acute sore throat, if caught at the commencement, cannot be disposed of in twenty-four to forty-eight hours. The sweating may continue for a few days after the decline of the fever on slight provocations; but it then ceases.

The appearance of the inflamed part also exhibits, in a striking degree, the beneficial effects of the drug. Thus, large, livid, red, glazed, and dry tonsils may often in twenty-four hours have their appearance completely altered. If the medicine has been given before much lymph has been formed in these organs, in the time named the swelling and most of the redness will have disappeared, and the mucous membrane will have that look which proves the acute inflammation to have subsided—namely, it has become moist, and is bathed with mucus or pus. If just at this stage some strong astringent—such as glycerine of tannin—be applied, most of the remaining diseased appearance and the pain, if it continues, will be removed. Such are the visible effects of aconite on inflamed tonsils, &c.

These statements are not exaggerations; but the simple truth, as may be witnessed by those who will employ the aconite in the way to be immediately mentioned.

Its effects on catarrhal croup are as conspicuous. In a few hours the urgent dyspnœa is removed: and in a short time longer the fever is subdued. Severe colds, in which there is much chilliness with great aching of the limbs, with a hot, dry skin, and quick pulse, may be equally well treated by aconite. So, indeed, may all the slighter forms of inflammation.

The effects of this valuable drug, though not so rapid, are equally important on pneumonia, pleurisy, and the graver inflammations. These diseases may be considerably curtailed, and made much milder, if aconite is employed.

Its influence on inflammation has been ascribed by most observers to its power over the heart; and, as they truly point out, the remedy is found to be of most use in the sthenic forms of the disease; and where there is great weakness and the heart beats feebly, unless care is taken, it may do harm. The method of employing the drug has much to do with its success. As already said, it should, where possible, be given at the very beginning of the disease. Every hour is of importance; the use of the medicine should never be delayed. Of the tincture, half a drop, or a drop in a teaspoonful of water should be given every ten minutes or quarter of an hour for two hours, and afterwards continued every hour. If there be much prostration, and the pulse be feeble and weak, a still smaller dose will best be given.

It is not inappropriate to mention here what signal service the thermometer may render in enabling us to decide whether aconite should be given or not. When called to see a patient, and when the symptoms and physical signs are not sufficiently developed to decide whether an acute inflammation of some deep-seated part has set in or not, this instrument will often decide the doubt. No acute inflammation can exist without preternatural heat of the body. Hence, if in a doubtful case the temperature, after a careful investigation, be found natural, the case is not one for aconite; while, on the other hand, if the symptoms, although doubtful, indicate an inflammation, the presence of an increased heat of the body will very considerably add to the probability of its existence, and will so indicate the advisability of employing aconite.

Another instance may be mentioned. After scarlet fever, as is well known, acute inflammation of the kidneys is very liable to occur. This would at once be indicated by a rise in the temperature of the body. It is therefore desirable to direct the friends of such patients to observe, night and morning, the temperature; and if this should rise beyond limits of health, they should at once commence the administration of aconite, and not allow some hours to elapse before the patient can be seen by a medical attendant. It is true the fever may depend on some other complaint than inflammation of the kidney; but i will even then probably be inflammatory in character, as from gastric catarrh, overfeeding and the like, in all which cases the aconite wil be equally efficacious.

Whether aconite is of use in the fever of acute specific disease, as scarlet fever, measles, &c., is not so certain as its power over inflammation. But although there may be some doubt whether this remedy can lessen the severity of the fever of the acute specific diseases, there is no doubt it can control and subdue the inflammatory affections which often accompany them, and which may by their severity endanger life. Thus aconite will moderate the inflammation of the throat in scarlet fever, and the catarrh and bronchitis in measles, and in this indirect manner lessen the height of the fever. It appears to be unable to shorten the course of these acute specific diseases. In the treatment both of simple inflammations and acute specific diseases, aconite may be appropriately administered in conjunction with some other remedy which may be indicated.

The treatment which has just been described will be found of value in erysipelas, in which disease belladonna may also with advantage be given. In the treatment of acute rheumatism aconite has been much praised, and from the eminence of the authorities by which it has been recommended there can be no doubt of its usefulness. Still in this complaint its good services are not so apparent as in acute inflammation. This disease has no regular course or duration, but may, untreated, last only a few days, or many months. It is difficult, therefore, to decide whether the speedy decline of the fever in some cases is a natural decline, or has been accomplished by the aconite. It is certainly ineffectual in many cases, which appear to run their course uncontrolled by this remedy. So that it is still required to determine in what class of cases it is useful, and in what cases it is without effect. In one respect it often appears to be of service—namely, in removing the pain from inflamed and swollen joints.

Gouty pains are said by some to yield to this remedy, and it has in many instances, apparently with good results, been given to persons suffering from neuralgia.

The effect of this remedy on the heart has been mentioned. There it was shown to lessen the rapidity of the circulation. Aconite may thus be used in all cases where there is vascular excitement which it is desired to suppress, and also when it is desirable to diminish the force of the circulation. In fact, it may be given in precisely those cases which were formerly treated by bleeding.

This remedy may be employed with advantage when the menses are suddenly checked, as by cold, on account of its power to restore the flux, and so remove the distressing and peculiar symptoms which not unfrequently occur when such a disease is produced.

The "fluttering at the heart" of nervous persons, and also nervous palpitations, generally yield to this remedy. Usually when such disturbances occur, more general treatment is required, but when the conditions causing the palpitation cannot be discovered or cannot be removed, then aconite may be usefully employed.

The acute stage of gonorrhœa may be well treated by a drop of the tincture of aconite each hour, and the same treatment will often remove chordee.

◆

ON THE TREATMENT OF ASTHMA BY BELLADONNA.

By Hyde Salter, M.D., F.R.S.,

Fellow of the Royal College of Physicians, Senior Physician to Charing-Cross Hospital.

I do not know any sedative that has more "improved its position" of late years than belladonna. It is certainly given much more extensively, and is much better thought of, than it was twenty years ago. And I think the one is the result of the other: it is better thought of *because* it is more extensively given. There are cycles of therapeutics as well as cycles of disease; and many valuable remedies pass into a temporary desuetude by a common neglect, and then, from some accident, emerge into repute and usefulness. And this is not only true with regard to the medical world in general; it is equally so with regard to the practice of individuals. We are all of us apt to get into a groove in prescribing; and not only get into the habit of employing certain remedies, but get *out* of the habit of employing others. I must confess to this fault myself, and feel at a loss to explain on other grounds how it was I went on so long without giving belladonna a fair and thorough trial in asthma. For the last two years, however, I have used it extensively, and am so satisfied with the results that I think it worth while to publish a few of my cases, in illustration of its value and of my method of employing it.

If I were to express what appears to me to be the peculiar excellence of belladonna as a sedative in asthma, I should say it consisted in its power of diminishing reflex irritability—a power which it appears to me to possess in a degree greater, in proportion to its other sedative effects, than any other sedative.

My method of giving it will be best seen in the following cases. I do not know that the tincture has any advantage over other preparations, only it happens to be that which I have tried. I should think that the liquor atropiæ might, from its uniformity of strength, be even preferable.

Case 1. — R. G——, a lady aged twenty-five, who has been liable to hay fever for eleven years and to asthma for seven, came to me on May 18th, 1868, for the cure of her hay asthma. She had been suffering for nearly a month, and had not had a single night's rest. She was not troubled with her asthma by day, but only with her hay-fever symptoms. As soon, however, as she went to bed on came her asthma, and lasted regularly all night. She was worn out for want of rest, and felt fagged and miserable. I ordered her ten minims of the tincture of belladonna three times a day, telling her to increase the quantity, day by day, till the characteristic effects of the drug were produced. She gradually raised the dose from the ten minims to twenty. She felt better the first night after taking it. She took it for nine days, and had no asthma whatever. She then, thinking herself cured, and feeling her head very uncomfortable, omitted it for one day, and the following night got no sleep from asthma. She then resumed it and has had no asthma since. She now regularly takes twenty drops three times a day. Her head is slightly affected, and her eyes decidedly so—misty, and she cannot read; but there is not a trace of asthma. She has never found anything else prevent the attacks. The belladonna seems to have no influence whatever over the other hay-fever symptoms; the sneezing, running at the eyes, &c., go on as before.

Case 2. — Sarah P——, aged forty-six, has had asthma ever since she was nineteen years of age—that is, for twenty-seven years. For the last five months she has been worse than ever, and for some time past has had asthma regularly every night. It begins between two and three o'clock, and after that she gets no rest. I ordered her to take the tincture of belladonna every night on going to bed—to begin at ten minims, and gradually to increase the dose till her head and sight became affected. She came to me on the 29th of last July. On the 14th of August I find the following entry in my note-book:—"This patient came to me a fortnight ago yesterday. She has almost completely lost her symptoms ever since, having had uninterrupted good nights. She has gradually reached thirty drops of the tincture of belladonna, and now takes it every night. She looks wonderfully better, and is able to take long walks." From that time I have not heard anything of her.

Case 3.—Col. R——, aged forty, has had asthma for sixteen years. For the last few years it has been gradually getting worse, and now he has it almost every night, commencing at from one to two o'clock, a.m. He has tried various things without any success—Indian hemp, chlorodyne, ether, the inhalation of chloroform, dry cupping, coffee, iodide of potassium, abstinence, &c. I saw him on Sept. 16th, and ordered him to try the belladonna at night in the usual way. On the 23rd I find the following note:—"He has gradually got the belladonna up to forty minims without any appreciable inconvenience. The nights have been very good. The two last mornings there has been no oppression whatever, nor any sitting up in bed; he has slept right through the night. He walked this morning, directly after breakfast, from his house at Blackheath to the station—a mile—in sixteen minutes, and the same pace up from Charing-cross station here." I have not seen him since.

Case 4.—Wm. P——, aged thirty-eight, has been asthmatic seventeen years. His attacks come on every morning on rising from bed, but often trouble him throughout the day as well. There is defective respiration at the right base, violent paroxysmal cough, and a good deal of expectoration. This patient came to me on Oct. 13th. A week after I made the following note: —"Since coming to me this patient has taken the belladonna every night—twenty, twenty-five, and then thirty drops, to which last dose he has stuck. The result is that he is quite a different man. He has slept all through the night, dressed himself without any trouble or difficulty, and has walked half over London as quickly and well as ever in his life. When he arrived in town his breath was so bad that he had the greatest difficulty in getting from the Vauxhall station to the church near the bridge. He spits hardly anything. There is now a complete absence of all musical wheezing, and of any adventitious sound whatever: respiratory murmur quite re-established at right base, and indeed perfectly natural everywhere. And this change has taken place in one week."

For the following case, in which liquor atropiæ was used, I am indebted to my friend Mr. Hodson, of Bishop's Stortford.

Case 5.—"John L——, aged fifty-five, by occupation a gardener, of active and temperate habits, suffered, from the summer of 1864, from frequent attacks of shortness of breath, followed by expectoration. When he first came under my observation (Sept. 2nd) he presented the appearance of a confirmed asthmatic. The respiratory sounds, whenever I saw him, were always more or less characteristic of asthma. At night he generally became worse, so much so that he often found the greatest difficulty in getting up one flight of stairs to his bedroom. I gave him at first iodide of potassium (five-grain doses), then combined it with decoction of senega, afterwards with squills and compound tincture of camphor. He also took lobelia, &c., and burned nitre-paper. With the exception of the last, which always afforded some relief, the frequency and severity of the attacks were uninfluenced by the treatment; indeed he became so bad that his life was a burden to him. I was watching his distress one day, and deploring the inefficiency of treatment, and thinking how the constricted state of his bronchial tubes might be overcome, when the idea of trying a drug that so quickly dilated the pupil occurred to me, and I at once determined to bring him fully under the influence of atropia. He began, Oct. 26th, to take one-sixtieth of a grain in solution every six hours. A few doses produced marked relief, but I pushed the atropia until he took at each dose one-fortieth of a grain. He then became fully under its influence, with greatly impaired vision, entire absence of saliva, and most troublesome strangury. From this time the breathing improved, but he found it necessary to take the medicine two or three times a day up to the middle of the following February. In the spring I sent him for a few weeks for change of air, and upon his return he resumed his full work as a gentleman's gardener, which he has continued without interruption up to the present time (Dec. 1868). When he went away I gave him a supply of his atropia, in case an attack should come on, but he told me yesterday that he has never opened the bottle. During the last three years I have found atropia, in all cases of genuine asthma, quite as useful as in L——'s case, but I have never pushed it with anyone else as I did with him."

I believe one reason why belladonna has not had a greater reputation as a remedy for asthma is that it has not been given in large enough doses. I think that, like lobelia, it must be given in doses sufficiently large to produce its physiological effects, otherwise we have no right to say that it has been fairly tried, or to conclude that it has been a failure if it has not achieved a cure. I think to give ten minims three times a day in some mixture is simply worthless. I have seen now numberless cases in which both belladonna and lobelia have been consigned to the limbo of failures, when a fresh trial of them, on the plan of gradually increasing the doses till an ultimatum has been reached, has proved them to be perfectly successful remedies. Sometimes, but very rarely, belladonna will relieve asthma when given short of a physiological dose; sometimes, but still rarely, it fails to give any relief even when pushed to its full physiological effects; the common thing is for it to fail till so pushed, and then to succeed. When I find belladonna has only been taken in the ordinary small doses, without any increment, I always regard it as not having been tried at all.

The advantages of administering it in the way I have described are:—

1. That, giving it at night, you bring the full force of the drug to bear upon the disease at the time at which it is most liable to come on, and thus, if you are successful, tide your patient over the critical time.

2. By gradually feeling your way up to the required dose, you are able ultimately to reach without fear a dose which you would be unwilling to prescribe without such a tentative approach.

3. In those cases in which the therapeutical dose is reached before the physiological—that is, in which the asthma yields before the sight or head is appreciably affected,—it enables you to stop short as soon as relief is obtained, and thus spare your patient any of the disagreeable effects of the drug.

4. By giving it only once in the twenty-four hours, you are able to give a larger dose than you would be able to do if oftener repeated.

5. By confining the dose to bedtime, the patient's days are, in spite of a large dose, passed in comfort; for, as the morning advances, the dullness of head, confusion of sight, and drought of mouth pass away.

6. You are thus enabled to find out what is the dose for the individual—a very important point. People differ very much in their tolerance of

belladonna. Some of my patients have been unable to take more than twenty minims once in the twenty-four hours without very unpleasant symptoms; while I have known others able to take a drachm three times in the same interval without any inconvenience. And as they differ in their tolerance of the drug, so do they differ in the dose at which their asthma will yield. The only way to ascertain what that dose is, is to make each case a separate experiment, and this can only be done in the way I describe.

7. By giving the remedy three or four hours before the attack is likely to come on, the treatment becomes *prophylactic*. If by taking a dose every night for thirty nights the attacks have been for that time prevented, the patient has ceased to be an asthmatic for a month. This is a very different thing from having had thirty attacks in the same time which have been cut short by the remedy. In all "habitual" diseases, in which the recurrence keeps up the tendency, prophylactic treatment has, in relation to final cure, a pre-eminence it does not possess in diseases in which habit has no place. For such diseases it is *the* treatment. It does more than spare your patient an attack of his malady; it breaks, *pro tanto*, that chain of sequences which is the very life of the morbid tendency.

ON THE TREATMENT OF "EPILEPTIFORM" NEURALGIA IN ITS EARLIER STAGES.

By Francis E. Anstie, M.D., F.R.C.P.,

Senior Assistant-Physician to the Westminster Hospital.

There is no subject on which the lamented Trousseau shed more of the light of genius than that of the terrible kind of facial neuralgia to which he gave the name "epileptiform." The picture of that disease which came from his hands is wonderfully vivid, and wonderfully like the original, even if somewhat too sharply defined; and there is suggestiveness in the view which led him to call the disease "epileptiform," although the name itself be, as it unquestionably is, unfortunate. It was a pity, namely, to tempt ordinary thinkers to dwell more closely on the spasmodic manner of onset of the pains than on the remarkable constitutional and family history which distinguishes the victims of the disease; but, on the other hand, the word "epileptiform" may serve to call attention to the real and important family connection which there is between epilepsy and certain forms of facial neuralgia.

As regards the treatment, however, of this dreadful disease, Trousseau appears to me to have done the reverse of good by the precepts which he laid down. I say this with the diffidence one must feel in criticising so able a teacher; but also with a firmness of conviction that has been produced by undeniable, observed facts. Trousseau describes, with the brilliant eloquence so peculiarly his own, the tragic prospect which the sufferer from spasmodic tic has before him; how hopeless it is that he should obtain a cure, and how certain that any relief obtained by remedies will be followed by a return of all his sufferings. He lays it down as an absolute law that we are to expect nothing but a temporary respite or alleviation; and he then proceeds to say that this minor amount of good is to be procured by very large and increasing doses of opium better than by any other means. I observe that various later writers have followed in the same sense; but I am so entirely convinced that the principle laid down is wrong, that I shall here make a protest, and give my reasons as shortly as possible.

There is no doubt that Trousseau's description of spasmodic facial neuralgia, as a disease hopeless of cure, was, at the moment, nearly correct. He is evidently speaking of a malady quite different from the milder neuralgiæ which may occur at any time of life—a neuralgia which is rare, is confined to certain highly neurotic families, and which, among those families, only attacks a limited number of individuals who have passed the prime of life and entered upon the period of organic degeneration. The pain is of frightful severity, and is all the more difficult to bear because of the agonizing suddenness with which it darts through the affected nerve, perhaps aroused by some trifling and necessary muscular movement, such as mastication. That very large doses of opium are required to produce any great impression on the disease, if the medicine be given by the stomach, is also perfectly true. These doses must be continued, and rapidly increased, with the unfailing effect of seriously disordering the functions of digestion and assimilation. And, after all, the best result attainable is, that for a few weeks or months there may be a notable diminution of the severity of the pain; but with the certainty that, sooner or later, it will revive in all its intensity, and that then neither opium nor anything else will produce any perceptible impression upon it. The remainder of such a patient's life is rendered additionally miserable, in most cases, by a total derangement of digestion and consequent failure of nutrition.

Now I believe that a very much better result than this may be obtained if the malady be treated, from an early stage, according to the following plan:—1. Counter-irritation of a peculiar kind. 2. Nutritive tonics. 3. Subcutaneous injection of morphia, or atropia, according to circumstances.

1. Counter-irritation, to be useful in epileptiform facial tic, should not be applied to the branches of the fifth, but to those of the occipital nerve, at the nape of the neck. A blister in the former situation is as often hurtful as useful: in the latter, it is sometimes strikingly effective in gaining a short respite. And this is of very great consequence in this awful disease; for the mere fact of such pain being allowed to continue is itself of the worst possible omen. 2. The assiduous use of cod-liver oil, or of some fatty substitute for it, should be insisted on from the first, and is of the highest consequence. 3. Subcutaneous injection places us in a totally different position towards the use of opium in spasmodic tic. There is no longer any excuse for the use of enormous doses of opium from the first. It will be sufficient to commence with the use of one-sixth of a grain of morphia twice daily, increasing this, if necessary, to one-fourth and one-half a grain; and, in rare cases, to one grain. If this produces, along with the other measures, a notable remission of the pain, it should be cautiously and

steadily decreased, as circumstances may admit. In cases where morphia fails, atropia may be tried, in doses commencing at one-sixtieth of a grain. The injection of a less quantity than this would probably be useless in severe tic.

Hopeless as was the cure of the form of neuralgia which I have now described, under Trousseau's plan, or any other which might be directed to the object of deeply narcotizing the patient, the prospect is by no means so cheerless when the subcutaneous injection is employed, with the precautions above mentioned. Although I cannot say that I have ever seen a positive and complete cure of a facial neuralgia setting in under the conditions which have been described as peculiar to this disease, it is certain that the experience of those who have used the subcutaneous method extensively has proved that the attacks may be kept at bay, and their severity greatly mitigated when they occur; with this general result—that the setting in of a facial tic in the latter period of life, even in a patient whose family and constitutional history is of the worst augury, is no longer a fatal warning of life-long and scarce endurable misery. The economy in the necessary use of opium effected by the use of hypodermic rather than gastric administration is enormous; and this not merely for the purpose of producing a given effect by a single dose, but also (which is most important in regard to the preservation of digestion and nutrition with regard to the rate of increase in the doses.

In the above remarks I have only referred to methods of treatment which are within the reach of every practitioner. It is necessary to state, however, that for those who are so circumstanced as to be able to provide themselves with proper apparatus for the generation of a constant galvanic current, the prospects of effecting good in even the most seemingly hopeless cases of spasmodic facial tic are very greatly increased. Not to dwell, now, on my own more limited experience, I maintain that it is impossible for any candid person to study carefully the treatise of Benedikt without coming to the conclusion that we have in the constant current a remedy capable of effecting much more, in these severe cases, than any treatment by drugs, or any other means. A low-tension current from a Daniell's battery (using from five to fifteen cells, according to circumstances) applied daily in *séances* of a few minutes, appears sometimes to entirely arrest facial neuralgia of the worst type, and commencing under the most unfavorable omens. Especially may we indulge hope, as it seems to me, in regard to the results which may be obtained from the galvanization of the sympathetic, in cases which would otherwise afford no rational hopes of more than the most trifling amendment. But on this point I have not space to dwell at length, and any very condensed account of this mode of treatment would be likely to mislead. To those who possess the requisite preliminary knowledge of electricity and electro-physiology, and also the opportunities of providing themselves with the somewhat expensive and troublesome luxury of a really effective constant battery, I would urge the necessity of a careful study of the English treatise of Althaus, and the German treatises of Remak, Benedikt, and Meyer, upon the medical uses of electricity. They will find facts therein which will at once arrest their attention, and engage them seriously in a most important branch of the therapeutics of nerve-pain.

Wimpole-street, January, 1869.

ON A CASE OF

ISCHURIA RENALIS, ICTERUS, AND LOW PNEUMONIA COMBINED.

By John M. Bryan, L.R.C.P.L.,
Moreton-in-Marsh.

Mrs. R——, aged seventy-seven, a widow, and up to the present time an active old lady, of dark, rather sallow complexion, above the average height, and slightly made, was placed under my care on Sunday, Sept. 13, 1868. During the previous week she had been complaining of a bilious feeling, stars floating in front of her eyes, &c. On the morning of the 11th her friends noticed how ill she looked, and made the expressive remark that if ten years had passed over her head, since the day before, she could not have appeared older than she then looked. On the 12th she appeared very ill, and was scarcely able to get out of her chair, but never complained of pain; and her indisposition was attributed by her friends to over-exertion and exposure to cold. She had never suffered from gout, nor could I make out any previous history of kidney disease; indeed, she had scarcely ever been laid up with any illness except bilious attacks.

On the 13th Mrs. R—— seemed very ill, and scarcely able to support herself in her chair. She was downstairs. Her pulse was 90, small and weak; tongue moist and covered with a whitish fur, browner at the sides; no pain or tenderness in abdomen; the bowels had been opened the night before; loss of appetite; said she thought she had a bilious attack, and complained of giddiness, &c. I recommended her to go to bed as soon as possible, which she appeared loath to do; also to take light farinaceous diet, with a little brandy-and-water as a stimulant now and then. An effervescing diuretic mixture, containing a bitter, was sent, to be taken every four hours. In the evening she told me that she had not passed water since the day before, and complained of her limbs and back aching; in other respects she had not altered much since the morning. I advised her again, and more strongly, to go to bed, told her to take some gin-and-water at bedtime, and prescribed a mercurial and rhubarb pill.

Sept. 14th.—The patient had passed a restless night; tongue in much the same state, perhaps less creamy and the brown surface more distinct; cough, which she had not complained of before, was rather troublesome, expectoration frothy. On percussion, there was no unusual dulness over the lungs. On auscultation, there was crepitation posteriorly and inferiorly on the right side; other parts of the chest normal; breathing free, and respiratory movements not hurried. Still complained of her limbs aching much; no urine passed; no uneasy feelings or dulness on percussion over the hypogastric region; pulse quick and weak, 105. A diuretic mixture, containing carbonate of ammonia, &c., was sent, to be taken every four hours. Also to take beef-tea, small quantities of gin at stated intervals, grapes, &c. A mustard poultice was ordered to the back of the chest, and the steam from boiling water was diffused through the room. I also recommended a warm hip-bath, which she had, and felt more comfortable after. Evening: still no urine had passed. I sent a podophyllin and colocynth pill, to be taken at bedtime.

15th.—I met Mr. Mann, of Charterhouse-square, in consultation. The patient had a pulse of 88 to 100; no urine had passed; the bowels had acted slightly, the stool being of a brownish color and tinged with bile, and rather liquid. The crepitation had now spread to the middle, as well as to the lower lobe of the right side. Sputa as before; slight sickness; the conjunctiva and skin of a yellowish tint; abdomen resonant on percussion. We ordered her to take beef-tea, milk, gin in larger quantities, and sent her a purgative draught, to be taken immediately; an effervescing diuretic mixture, to be taken every four hours; and a mercurial and colocynth pill, to be taken every six hours; mustard-and-linseed poultices to the chest.—5 P.M.: We again met in consultation. The pulse was 110 to 120, and the heat of skin was increased; bowels unrelieved.—10 P.M.: The patient seemed in much the same state. I sent her a turpentine-and-camphor liniment, to be well rubbed over the loins and abdomen.

16th.—I was suddenly called up at 2 A.M. Mrs. R—— had, with assistance, got out of bed to use the enama apparatus; she was left for a moment sitting on a chair, and, whilst unsupported, fainted, and fell upon the floor. When I saw her she was in bed, but with pulse scarcely to be felt. Stimulants were administered. At 10 A.M., as no urine had passed, I introduced the catheter, and drew off barely 6 oz. of smoky-looking urine, the last few drops being very thick. She expressed herself as relieved after the operation. Pulse very irregular, thready, fluttering, 130; heart's action irregular and tumultuous; sickness more urgent; tongue clearing at the tip, where it was red; hands very cold and clammy, and she was noticed to be restless with them, continually smoothing the bedclothes; skin intensely yellow and perspiring freely; cough easier, and sputa less in quantity. I ordered her to take brandy and soda water (instead of gin), and stimulants at intervals were given, and ice to be sucked; also a diuretic mixture; and, later in the day, calf's-foot jelly. At 10 P.M. the sickness had abated considerably. I then added twenty minims of nitric ether to each dose of her mixture.

17th.—The bowels had been opened four times during the night, the stools being small in quantity, brownish, tinged with bile, and chiefly liquid. Pulse very regular, about 98, scarcely to be felt; sickness much relieved. No urine having passed, I again introduced the catheter, but found nothing. Skin and conjunctiva less yellow; great prostration. Omit the pills.—6 P.M.: The bowels had been opened three times during the day. Chlorodyne draught, with ammonia, to be taken directly.—9.20 P.M.: I was hastily summoned, and found she had just breathed her last, without a struggle or apparent pain.

This case is peculiar from the absence, towards the end, of the usual coma or convulsions, which usually take place in about four or five days from the occurrence of complete suppression of urine. The brain continued remarkably clear during the whole course of her malady; she gave orders for the dinners to be served downstairs, and other directions for various household matters. No pain was ever complained of in the region of the kidneys or over the bladder. Neither the stools nor the perspiration had any urinous smell, and she scarcely ever had any headache worth speaking of. There was no organic disease of the heart.

Additional Notes, by J. MANN, Esq.

1. As to the duration of ischuria. On Tuesday morning, the 15th, the patient told me she had passed no urine since Thursday, the 10th. But I think her memory had failed, and that her statement to Mr. Bryan on the evening of the 12th, that she had passed no urine since the day before, was the more correct one. The patient died on the evening of the 17th—i. e., the fifth day after the suppression of the urinary secretion.

2. As to the presence of icterus. This was not due to any obstruction to the passage of bile, which was present in the alvine excretions, apparently in the normal quantity. Was it not due to the same cause which produced the ischuria? Dr. Abercrombie[*] remarks that there are some cases of icterus which are analogous to ischuria renalis; the separation of bile from the blood being interrupted in the former as the urinary secretion is in the latter. This was a case in which the two were combined, and probably from the same inhibitory influence acting on the nerves of organic life.

3. On the absence of lethargy, convulsions, or coma, which usually terminate cases of ischuria renalis. The explanation of this is to be sought in the concurrence of similar disease in two important organs, in the presence of low pneumonia, and in the advanced age and previous decay of the patient, which caused her to sink before these symptoms had time to be developed.

ON REMOVAL OF THE TONGUE BY DIVISION OF THE JAW AND THE USE OF THE ECRASEUR.

BY CHRISTOPHER HEATH, F.R.C.S.,

Assistant-Surgeon to University College Hospital, and Teacher of Operative Surgery in University College, London.

Two methods of removing the tongue have been recently brought under the notice of the profession by Mr. Gamgee and Mr. Nunnely respectively, and the latter—i. e., with the écraseur—I have seen yield excellent results in the hands of Mr. Erichsen. In Mr. Holt's practice, also, I have seen excellent results from the employment of the écraseur in a somewhat different manner—viz., by dividing the sublingual tissues horizontally with an écraseur, so as to allow the tongue to be drawn thoroughly forward, after which the instrument can be readily made to encircle the organ at its base. I wish now to place on record a case of removal of a great part of the tongue, affected with disease which involved also the floor of the mouth, by dividing the jaw after the manner of Mr. Syme, and then applying the écraseur—a proceeding for which, however, I can claim no originality, as I find it has been performed by Mr. Moore and Mr. Nunn at the Middlesex Hospital, and probably by other surgeons. The cases which cannot be treated without the severe complication of dividing the lower jaw are comparatively few, but where the disease has already involved the floor of the mouth, so that it is impossible to encircle the whole of it with the écraseur, or even, to draw the tongue forward, no other proceeding can be adopted. Any or all of these operations appear to me, however, only applicable to cases of disease requiring the removal of the whole *breadth* of the organ; when but one side is involved, the écraseur, however applied, appears to me unsatisfactory, and I have myself obtained, and witnessed in the practice of others, much more satisfactory results from free excision with the knife, and the application of the actual cautery for the arrest of hæmorrhage. The following are the notes of my patient's case:—

---

[*] Diseases of the Abdomen, 3rd edition, p. 367.

L. D——, aged sixty, was admitted into University College Hospital under my care on the 7th September, 1868, suffering from cancer of the tongue, which had been noticed for six months. On looking into the mouth there was, between the tongue and the lower jaw on the left side, a ragged ulcerated surface occupying the floor of the mouth. This was prolonged to the side of the tongue, and with the finger a hard mass could be felt in the substance of the organ, extending beyond the median line and to about two inches from the tip. The patient complained of constant pain in the tongue, but was otherwise in good health. On September 14th a slight enlargement of one of the submaxillary glands was to be felt. The operation had been deferred till the 19th, on account of the patient's private affairs.

On September 19th, under chloroform, I divided the lower lip in the median line, and, having dissected back the tissues from the bone, bored a hole on each side below the level of the teeth, and then divided the jaw with a fine saw, keeping strictly to the median line so as to avoid extracting any teeth. The jaw being divided, the incision was prolonged to the hyoid bone, and, the halves of the jaw being retracted, the disease was dissected up from the floor of the mouth, and some of the sublingual structures were divided. A thread being passed through the tip of the tongue, it was drawn forward, and an écraseur was slipped over it and behind the disease in the substance of the tongue. The écraseur was worked at half-minute intervals, and the tongue divided. As soon as the division was completed, one of the ranine arteries was seen bleeding, and was effectually twisted. No more bleeding occurring, the wound was sponged out with solution of chloride of zinc (forty grains to an ounce), and the sides of the jaw were brought together with a piece of thick wire, which was twisted firmly. The lip was then brought together with two harelip pins and a suture, the lower part of the wound being left open for a drain. Two hours after the operation there was free bleeding from the mouth, and, as I had been called out of town, my colleague, Mr. Berkeley Hill, was sent for, who opened the wound and the jaw, when the ranine artery opposite to that twisted at the operation was found bleeding, and a ligature was applied to it and to another vessel, the parts being brought together as before.

No further hæmorrhage occurred, and the patient made an uninterruptedly good recovery, being liberally fed with an ordinary feeding-boat. The harelip pins were removed on the fourth day; and there being some submaxillary swelling, a poultice was applied for a few days. There was profuse discharge from the lower portion of the wound for three weeks; and no doubt much of this was saliva. After this time the discharge came from the mouth, a good deal being caused by the irritation of the wire in the jaw, the ends of which came against the lower lip.

On the 17th of October (four weeks after the operation), the jaw not having united, I made an attempt to twist the wire tighter, since the patient felt the two pieces working upon one another. The ends of the wire, however, broke short off, and the attempt was necessarily abandoned. Under these circumstances, Mr. Ibbetson was applied to to fit a cap to the teeth to hold the pieces of the jaw firmly together. A model was taken by Mr. Ibbetson on the 21st of October; and on the following day an accurately-fitting cap of black vulcanite was put on, and was quite comfortable. On Oct. 28th two small pieces of bone had worked out from the symphysis. The saliva still flowed out of the mouth in great quantities. The tongue had quite healed; but the patient occasionally felt a darting pain in it. The patient had to wear the vulcanite cap for six weeks before the jaw was completely consolidated; and I then ventured to remove the wire, which up to that time had remained in the bone. He then returned to the country, the only complaint being an occasional overflow of saliva from the mouth.

It will be observed that the long stay of the patient in the hospital was entirely due to the non-union of the divided jaw; and I understand that in the cases of the same operation at the Middlesex Hospital a similar difficulty was experienced. In the account of Mr. Syme's only successful case of removal of the entire tongue (THE LANCET, Feb. 4th, 1865) by division of the jaw, and removal with the knife, no mention is made of the union of the bone; but it could hardly have been complete at the time of the patient's departure from Edinburgh. In my own case the greater age of the patient may account for the delayed union. The disease in the tongue presented the appearance of medullary rather than of epithelial cancer; and this opinion was confirmed by the committee of the Pathological Society to whom the preparation was referred.

Cavendish-place, January, 1869.

SULPHUROUS ACID IN TYPHOID FEVER.

By Robert Hamilton, F.R.C.S.,

Surgeon to the Southern Hospital, Liverpool.

In the late epidemic fever at Bootle, I employed in the last eight cases which came under my care sulphurous acid, and was so much impressed with the mild form the attack assumed, and the apparent cutting short of the progress of the disease, that I am induced now, when fever of the same description is prevailing in other parts of England, to ask those readers of THE LANCET who have much to do with it, to give the remedy a more extended trial, and thus confirm or otherwise the report here given.

The cases were all typical ones of typhoid fever occurring in the district infected, and, in some instances, in houses where previous cases had been. Five were children under ten years of age; three were grown-up young people. The symptoms corresponded with the first division of symptoms described by Dr. Scott in his paper on the epidemic at North Shields, and I therefore do not recapitulate them. The sulphurous acid was given in one-drachm doses every four hours to children, and three-drachm doses to the adults, combined with orange syrup and water.

Of course, it was in reality but the internal administration of sulphur in a form that could more readily assimilate itself with the other contents of the stomach. It was commenced on the first day of my seeing the patient, which was generally the second day of the attack. It did not at once relieve, but the progress of the disease seemed stopped, and after the fifth day improvement began, and rapidly continued to convalescence.

If these results were due to the sulphur, then it only accords with the theory of the nature of the disease generally entertained: the germs of a fungus have entered the system. Its rapid growth and multiplication within would have poisoned the blood and the whole system, had it not been checked by the destructive action of the sulphur upon it, whereby it was rendered inert, and its further development checked. The disturbance of function and of nutrition already set up was recovered by the *vis medicatrix naturæ* as soon as the fever poison ceased to act.

Liverpool, Dec. 22d, 1868.

◆

SUCCESSFUL CASE OF OVARIOTOMY.

PEDICLE CLAMPED; ACCOUCHEMENT SEVENTEEN MONTHS AFTER OPERATION.

BY J. SWIFT WALKER, M.D.,

Medical Officer of Health to the Borough of Hanley.

M. S——, native of Tracey, Devonshire, aged thirty-six, married; had six children born alive, two premature births caused by fright. A fine tall woman, looking younger than her real age, one of three sisters, none of whom have suffered from any uterine disease. About two years ago began to suffer palpitation; menses scanty, and often deficient.

On Nov. 29th, 1866, was confined of a child, when she began to be very prostrate; never perfectly recovered, but always noticed that she was no smaller in size than before accouchement; in fact, she was larger a fortnight after than before. Never tapped.

On April 9th, 1867, she was first seen by me, and was evidently suffering from over-suckling; abdomen a tremendous size, distended by a distinct tumor, but more to the left than right side; rests better on left side; not painful to touch; not movable; fluctuation distinct on palpation; measures round the body opposite the umbilicus forty-eight inches—eight inches from umbilicus to ensiform cartilage, fourteen from the anterior superior spinous process to the umbilicus; no œdema of feet or legs; no bearing down or pain in the groin; great sense of weight; on vaginal examination the os is *in situ*, but a distinct tumor can be felt pressing on the side of the vagina; obliged to pass water very frequently; areola of breasts not darker than usual.

On May 1st, 1867, she was put under chloroform in a room of a temperature of 60°, and an incision made eight inches long. The cyst was punctured, and nineteen pints of clear fluid drawn off, when the cyst was found adherent to the abdominal parietes internally; also to the omentum, but easily stripped off; then turned out of peritoneal cavity. The pedicle was clamped, being very short, and the wound was closed by nine sutures.

On examination, the tumor consisted of a multilocular cyst, containing many smaller ones, and weighed two pounds and a half.

May 3rd.—Removed clamp.

8th.—Passed water herself, and bowels relieved.

12th.—Sat up.

October 20th, 1868.—She was confined of a fine male child; natural labour, and made an unusually rapid recovery.

◆

NOTES OF A CASE OF KERATITIS.

BY M. CHARTERIS, M. D.,

Assistant-Surgeon, Glasgow Eye Infirmary.

In Mr. Hutchinson's clinical record of cases of keratitis, which he ascribes to hereditary syphilis, only two cases are mentioned in which the subjects of this peculiar malady are reported to have had children. Doubtless, this is in a great measure due to the fact that keratitis occurs, as a rule, before marriageable years, and that those who have been attacked by the disease are lost sight of after the affection has been cured or palliated. Assuming the syphilitic origin of the disease to be a correct inference, I am somewhat at a loss to account for the non-transmissibility of the poison to the children in the following case, which lately came under my observation.

M. G——, aged thirty, has had keratitis for the last ten years, the affection being subject to various relapses. For six years she has been an out-patient of the Glasgow Eye Infirmary, presenting herself at the institution at intervals, or whenever the disease appeared in any aggravated inflammatory form. At the time I first saw her, about two months ago, both eyes presented the dim, ground-glass appearance of keratitis. The two upper central incisor teeth were very typical: they were peg-shaped, notched vertically, and set angularly to one another. The bridge of the nose was sunken, and the general contour of the face exhibited all the peculiarities which Mr. Hutchinson has so faithfully delineated. She had no glandular enlargement, nor was there any evidence of hereditary struma. She has been married six years, and has had three children; the eldest two being alive, and the youngest having died during dentition. She assured me that her children were quite healthy, and a personal visit to her house satisfied me of the truth of her statement. The eldest, a boy, was a strong, well-made, rosy-cheeked little fellow. The second child, a girl aged four years, had all the evidences of good health and a good constitution. The father and mother of M. G—— were alive and well, and they assured me they had always enjoyed excellent health, and had never had any eruptive or other disease. They had had two children, M. G—— being the elder. The younger also was married, and was the mother of two healthy children.

From the history of this case, thus briefly indicated, it may be seen that the cause of keratitis in the patient under observation was as obscure as the non-transmissibility of the syphilitic poison (?) to her children was remarkable.

Glasgow, Nov. 9th, 1868.

ON THE FLUID OF HYDROCEPHALUS.

By Chas. Meymott Tidy, M.B., C.M.,

Joint Lecturer on Chemistry at the London Hospital.

I have to acknowledge the kindness of Dr. Woodman and Mr. Heckford in preserving the fluid in a case of hydrocephalus, and forwarding it to me for analysis.

The following is an abstract of the notes of the case as sent me by Mr. Heckford:—

The child came under his care when it was four months old. It was born hydrocephalic. The head steadily increased in size, and when he first saw it it measured twenty-six inches in circumference. Mr. Heckford tapped the head with a No. 1 trocar on the right side, an inch and a half from the middle line, in the space between the frontal and parietal bones. Two days after the operation it had an attack of convulsions. A month after this Mr. Heckford tapped it again, and it was this fluid I examined. The child had taken two grains of iodide of potassium from his first seeing it. Previous to the last operation both eyes were rotated downwards, but the pressure being now removed from the orbital plates, the position of the eyes has become almost natural

The liquid was turbid; numerous flocculi were seen floating in it. It had a specific gravity of 1007·6.

1000 grains of the fluid yielded 5·18 grains of solid matter. This consisted of—

Albumen	0·98
Sugar	0·63
Carbonate of soda...	0·02
Sulphate of soda	0·08
Chloride of sodium	2·14
Chloride of potassium	0·6
Fat	0·1
Alcohol extract	0·63
	5·18

Cambridge-heath, Hackney, Dec. 1868.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

Nulla autem estalia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et interse comparare. —Morgagni *De Sed. et Caus. Morb.* lib., iv. Proœmium.

KING'S COLLEGE HOSPITAL.

CLEFT PALATE.—REMOVAL OF A LARGE SEBACEOUS CYST FROM THE NECK.

(Under the care of Sir Wm. Fergusson.)

A lad was placed upon the table in the operating theatre on Saturday, January 2nd, whose cleft palate Sir William had operated upon a twelvemonth since. There remained only a cleft of the uvula, the edges of which were now pared and brought together by a stitch. Sir William called attention to the great irritability which the patient then displayed as contrasted with his firmness under the former and more severe operation, and remarked upon the excessive sensitiveness of the uvula, which it was very common to see. He had performed the present operation in deference to the wishes of his patient and his friends, who believed that his speech would be thereby improved. He did not himself believe that a cleft condition of the uvula interfered with articulation. There were a great number of persons with congenital deformity of this kind, and their articulation was not impeded by it. The lad had improved in his speech since the first operation, and Sir William thought that he would still further improve. Indeed, it was his experience that many patients acquired unusually perfect powers of articulation after operations for cleft palate, probably because they educated the faculty with more than ordinary care.

A grey-haired man was next presented, who had a tumor in the right side of his neck, just below the auricle, and behind the ascending ramus of the lower jaw. The tumor was readily movable, and covered with skin, which appeared very thin. Sir William made a crucial incision through the skin, reflected the flaps, and dissected out entire a tumor, which, when removed, was the size of a duck's egg. It consisted of a cyst or bag filled with sebaceous material, and the operator had adopted this by no means the readiest plan of removal, because he wished to preserve the cyst entire as a rare example, in regard of its size, of a sebaceous cyst. The tumor commenced so long ago as twenty-seven years. It was only within the last few years, he said, that it had grown rapidly, and there was nothing to be done for it that he could recommend except removal by the knife. No doubt the application of caustic would have taken it away, but at great expenditure of time and suffering.

HYDATID TUMOR OF THE LIVER TREATED BY SIMPLE PUNCTURE.

(Under the care of Dr. DUFFIN.)

The following case aptly illustrates the value of the method of puncture with the small trocar in the treatment of cases of hydatid tumor of the liver: —

S. B——, aged twenty-seven, a man of rickety build, but otherwise of a sound constitution, applied at King's College Hospital, on October 13th, 1868, complaining of indigestion and aching pains about the right side and shoulder. On examining the spot indicated the right inferior mammary and hypochondriac regions were found to bulge considerably, and the hepatic dulness extended vertically downwards from the nipple over a space of nine inches and a quarter. The possibility of a hydatid tumor was at once opened up, but the necessity of great caution in the diagnosis became at the same time manifest, owing to the extreme deformity the thorax had undergone during childhood from the process of rachitis, and from the existence of considerable lateral curvature of the spine. These rendered all transverse measurements next to worthless. Nevertheless a relative increase of half an inch in the right semicircumference could be established. This proved to be half an inch below the line of the costal cartilages. Much more valuable information was obtained on tracing the upper limit of the dull area. This was found to represent a curve, with its convexity directed upwards, and reaching its highest point at the fourth right rib, a little outside the nipple. From this, its greatest point of elevation, the line trended sharply downwards and backwards to the tenth rib, and downwards and inwards to the xiphoid cartilage. The lower edge of the liver was sharp and supple, and convex in the opposite direction. The summit of the bulge thus corresponded to the centre of the organ, and at this point an obscure sense of fluctuation could be detected. Beyond the pushing upwards of the right leaf of the diaphragm, no notable visceral displacement existed. Vesicular breathing could be traced to the upper edge of the dulness. The only annoyance complained of was an indistinct sense of aching in the hepatic region. The inferior edge of the dull space was found to vary its position slightly with the movements of respiration, and the changes of posture of the patient, giving presumptive evidence of the absence of adhesions. The rest of the evidence was mainly negative. Neither ascites, jaundice, nor evidence of infection existed.

After a consultation with Mr. Henry Smith, Dr. Duffin requested that gentleman to make an exploratory puncture with a long, fine trocar and canula. Twenty-eight ounces of a clear, transparent, watery fluid were readily withdrawn. This proved to contain numerous echinococci and free booklets. As soon as the jet of liquid began to slacken, the end of the canula was at once occluded with the thumb, and the instrument withdrawn. During the latter part of the operation the patient complained of a deep sense of aching in the region of the liver. A flannel bandage was at once applied to fix the abdominal muscles, and a full opiate administered. About six hours later the patient had two sharp rigors, and lay with his knees drawn up in dorsal decubitus. The belly generally was tympanitic, and somewhat tender. The aspect was that of shock; the pulse had risen to 104, the temperature to 100°. An additional opiate was given. A fair night followed; and the next morning the temperature had fallen, and the abdominal tenderness was less; his pulse, however, had risen to 120. On the second day from the operation the pulse ratio began to slacken, and from that time forth he had no unpleasant symptoms. On the fifth day a physical examination showed a diminution of 2¼ inches in the vertical dulness, and of one half inch in the semicircumference. The man has continued under observation till the present time. The vertical dimension has since fallen an additional half inch; and he is completely comfortable.

Dr. Duffin remarked upon this case:—"The only diagnostic difficulty which we had to contend with consisted in the deformity of the chest by the rickety softening and subsequent distortion of its walls. It served to bring out in strong relief the value to be attached to the great convexity of the upper line of dulness. This, together with the great increase of the vertical dimensions of the liver, the slight bulge below the costal cartilages, the almost painless character of the swelling, and the general good health of the patient, constituted the foundation of the diagnosis. In determining the propriety of an operation, the probable absence of adhesions had to be borne in mind; but if puncture with a very fine trocar be resorted to, I believe that little importance need be attached to that circumstance. With a few simple precautions, the chance of any hydatid fluid escaping into the peritoneal sac may be reduced almost to the vanishing point. One of the moments of greatest danger is that of the withdrawal of the canula. As it quits the liver charged with hydatid fluid it should be occluded with the finger, and so brought out loaded with its contents. At the same moment the abdominal wall should be firmly pressed against the liver. The elasticity of the hydatid exocyst is so great that only an extremely minute portion of fluid is likely to follow the canula. The smaller the instrument selected, the less will be the chance of any hæmorrhage; and it is further remarkable how tolerant the peritoneum is of blood as contrasted with other fluids. Another advantage of a very fine canula is, that the fluid leaves the hydatid cyst very gradually. This will be obvious if we consider the vascularity of the organ implicated, and the changes in its relations that the withdrawal of a considerable amount of fluid must necessarily occasion. Neither is it necessary to evacuate the cyst completely. Even with a very partial emptying, it is probable that the elasticity of the exocyst can peel off and fold the endocyst so as to interfere with its vascular supply, and ultimately induce its degeneration. Next in importance to the method of the operation stands the most complete rest of the abdominal viscera which can be obtained. Hence I would strongly recommend fixing the abdominal walls with a flannel bandage, and the immediate administration of a free opiate. In the instance before us some rigors, general abdominal tenderness, and slight febrile signs, ensued a few hours subsequent to the operation. Within twenty-four hours, however, all threat of danger had passed away. Something similar to this has been so frequently noted after this method of interference that it may be considered almost as the rule. Provided the temperature does not exceed 101°, I believe it need not alarm us. I am inclined to ascribe it to the great change in the relations of the portal system, which the decrease of pressure within the liver must necessarily entail. It is too transient and too frequently observed to be attributable to aborted peritonitis. According to the statistics collected by Dr. Murchison, a first puncture is also a final one six times out of seven. Should a second be requisite, no additional risk is involved in a repetition of the first process. If suppuration of the cyst supervene, free evacuation should of course be at once resorted to. The accident happened, according to Dr. Murchison's statistics, ten times out of forty-six, but even in seven of these, free emptying of the cyst was followed by a favorable result."

ST. GEORGE'S HOSPITAL.

TWO CASES OF STRANGULATED HERNIA; WITH THE POST-MORTEM APPEARANCES.

The practice of opening the sac in operating for strangulated hernia is much more frequently adopted at some hospitals than at others. At St. George's Hospital it is generally done, and the operation without opening the sac forms the exception to the rule. One reason given for this practice is, that the condition of the bowel can in that way be ascertained; but a more important reason, and one lately much insisted upon by Mr. Henry Lee, is, that the fluid contents of the sac (if this be not opened) are returned together with the intestine into the abdomen. These contents consist often of lymph, blood, and serum, in which various alterations are taking place. Now it is well known that decomposing fluids are absorbed with great rapidity from a serous surface, especially if that surface be large. If any bloody fluid or lymph be contained in a hernial sac, and that sac be not opened, then when the bowel is returned the fluid is returned with it into the peritoneal cavity. This fluid, mixed perhaps with decomposing blood, is looked upon by some as a fertile source of peritonitis, and great care is taken to remove it after the sac is opened in the operation for strangulated hernia. In two cases which occurred in St. George's Hospital two weeks ago these facts were particularly dwelt upon. In one of these, a patient seventy-five years of age, when the sac was opened a net-work of white lymph was seen forming a loose kind of inner sac; and in the other case, in which the taxis had been firmly applied, the sac contained a quantity of bloody fluid. The fluid contents of the sac were carefully removed in both these instances before the hernia was reduced, and the patients are both doing well. The following two cases illustrate the same point—namely, that a formidable source of mischief may exist within the sac itself; and if this is not opened, and sometimes if it is, fatal consequences may be caused thereby after the stricture is relieved. The first case is very peculiar and interesting from the fact of the *mucous* surface of the bowel having apparently been destroyed by the strangulation of the intestine, and the passage through the intestine havi subsequently become almost closed by a proce of cicatrisation. Mr. Loigh, surgical registr has obliged us with the notes.

Case 1.—Margaret S——, aged thirty-five, cook, was admitted into the Princess ward o the 28th of April, 1868, under the care of M Henry Lee. The history she gave was that f about three years she had noticed a swelling i the left groin; but as it did not increase, an caused her no inconvenience, she thought nothi of it, and wore no truss. The morning befo her admission she was seized with pain in th swelling and retching, and at 8 A.M. was fir sick. She took aperient medicine, but witho effect; and on the morning of the 28th, as th sickness and pain continued, she applied fo admission.

On admission at 9 A.M., she complained of pai in the lower part of the abdomen and sicknes There was a femoral hernia of the left side, th size of a hen's egg, tense, tender, and witho impulse; pulse 92; tongue coated. She wa put to bed, and ice applied to the tumor, bu soon after fæcal vomiting ensued.

At 1 P.M., as the symptoms of strangulatio continued, it was determined to operate, and a the patient was unwilling to take chloroform the operation was performed without it. M Henry Lee made an incision about two inche long over the tumor, dissected down and opene the sac, being unable to reduce the hernia without so doing. The sac contained a small knuckl of intestine, very much congested, and about a ounce of bloody serum, and was adherent to th tissues around. The stricture was situated a the crural ring, and was exceedingly tight. Afte it was divided, the gut was returned. The woun was closed with silver sutures, and a pad an figure-of-8 bandage applied over it. She wa ordered beef-tea and twenty minims of tinctur of opium three times a day.

April 29th.—Passed a quiet night; pulse 96 free from pain.

May 1st.—The bowels have acted naturall twice during the night; pulse 92. The pad an bandage removed; wound healthy, dischargin slightly. Ordered ordinary diet and one pint o porter.

The patient subsequently progressed favorably the stitches were removed, and the wound granulated.

June 2nd.—The wound is now quite heale and the patient supplied with a truss. Th bowels are confined, and never act without medicine. Constipation still continued, so she wa ordered some pills of extract of aloes and colocynt from time to time. She also complained of du aching pain at times, when the bowels were confined, in the lower part of the abdomen, but wa up and about with her truss on.

July 3rd.—About midday she complained o great pain in lower part of abdomen, becam suddenly collapsed, and died at once.

At the post-mortem examination the next day old adhesions were found in both pleuræ, and th lungs were very œdematous. The left side o the heart was contracted and empty; the righ side contained a decolorised clot. The valve and structure of the heart were healthy. Th intestines were much congested, and at th junction of the jejunum, and ileum the gut fo about an inch was of a dark slate color, and was adherent to the iliac fossa. Above this point the gut was dilated, quite full, and its coats thickened; below, it was contracted and empty. At the point of adhesion the coats were much thickened by fibrous deposit, which materially constricted the calibre of the canal, so that water could only flow through it in a very small stream. The mucous surface at this point was firmly contracted by a process of cicatrisation after ulceration. The other abdominal viscera were healthy.

Case 2.—Frederick C——, aged twenty-six, a laborer, was admitted into the Fitzwilliam ward on October 5th, 1868, under the care of Mr. Holmes. The history given was that he had been ruptured for about nine years, and had always worn a truss. The hernia used occasionally to come down, but could easily be returned. At 9 A.M. on the morning of his admission, he was at work with a truss on that did not fit him, when the hernia came down, and as he could not get it back, he came to the hospital. He had had pain in the abdomen, but no sickness before admission.

On admission, at 10.30 A.M., he complained of great pain across the lower part of the abdomen. He was somewhat cold; pulse 100; expression anxious. There was a scrotal hernia of the left side, about the size of an Ostrich's egg, tense, tender, and without impulse on coughing. He was put to bed, and a bladder of ice applied to the tumor; but as the hernia remained in the same state, and fæcal vomiting set in, at 1 P.M. chloroform was given, and taxis applied, but without success. Mr. Holmes then made an incision about three inches and a half long, over the external ring, and opened the sac, which contained a large amount of small intestine, somewhat bruised, and considerably congested. The stricture was divided, and the intestine with considerable difficulty returned. The sac also contained some clotted blood, which came from a ruptured portion of the mesentery. The wound was closed with silver sutures, and a pad and figure-of-8 bandage adjusted over it. He was ordered beef-tea, and one grain of powdered opium immediately.

Oct. 6th.—There is a good deal of swelling of the scrotum; expression anxious; pulse 116. The recti muscles are very rigid, and he complains of great pain and tenderness over the lower part of the belly. About midday, the bandage, pad, and sutures were removed, and some sanious fluid escaped. A small conical pad was placed over the internal ring. Fomentation ordered.

7th.—The abdomen is distended with flatus; pulse 132, very weak and small. There is repeated hiccough and fæcal vomiting. A long tube was passed up the rectum, when some flatus escaped, and later in the evening a rue injection, but without relief. Wound gangrenous.

8th.—Is sinking. Pulse very weak, 112; skin clammy. The sickness and hiccough continuous. The rue injection repeated without relief.

9th.—Sank and died at 8 P.M.

At the post-mortem examination the next day, at 1.30 P.M., a grangenous wound was to be seen on the left side of the scrotum; the tissues around were black, and infiltrated with air. In the upper part of the inguinal canal could be felt a swelling which resembled a hernia. The lungs were much congested, œdematous, and emphysematous along their free margin. The left ventricle of the heart was closely contracted; the right was dilated, and contained a decolorised clot. Its structure and valves were natural. The liver and kidneys were congested; the spleen small, shrivelled, and the capsule wrinkled. The intestines were much congested, and covered with varicose vessels. The upper half of the small intestine was distended with air and fæces; the lower half empty. At the junction of the two portions the gut was reduplicated on itself, and the two serous surfaces, where touching each other, were adherent. This knuckle of intestine was lodged in the inguinal canal, to which it was slightly adherent. Thus an almost complete obstruction was formed. On the mucous membrane at this part was a small ulcer. The mesentery corresponding to the strangulated portion was much bruised and ecchymosed, and there were some small clots of blood in various parts of the abdominal cavity.

ST. MARY'S HOSPITAL.

PROLAPSUS UTERI OF SEVENTEEN YEARS' STANDING CURED BY OPERATION.

(Under the care of Mr. Norton.)

The patient, whose case is appended, is at the present time—a year and a half after the operation—a milk carrier in London; and though the weights she bears are excessive, there has been no return of the disease, nor have there been any bearing-down pains. She continues in perfect health.

Mrs. M—— had labored under the severe effects of an extensive prolapse of the womb since the birth of her last child, a period of seventeen years. She stated that she was unable to walk, or in any way to gain a livelihood, and that she was only free from pain when lying down.

On examination, the uterus was found altogether external to the vagina. It was much enlarged, thickened, and indurated, and around the os, and upon different parts of the vagina, were several small ulcerations. Pessaries of various forms had been used to support the womb, but without effect.

Mr. James Lane saw the patient with Mr. Norton, and it was determined that the operation which Mr. Lane had performed on several occasions should be adopted.

On the following Wednesday Mr. Norton removed an elliptical piece of the mucous membrane about three inches and a half in length, by two in breadth, from the vesical wall of the vagina. The cut margins were then brought together by means of ten silver-wire sutures, and the uterus returned to its normal position. The bowels were confined by opiates till the sixth day, and then relieved by castor oil. The vagina was syringed daily with warm water, and after eight days the sutures were removed.

Fourteen days after the first operation, Mr. Norton removed by a horse-shoe incision rather more than an inch of the mucous membrane of the posterior and lateral walls of the vagina, including the cutaneous margins of the fourchette. The denuded surfaces were now approximated as in the operation for ruptured perineum, and were firmly fixed by means of silver-wire quilled sutures. The projecting lips were more evenly adapted by a second row of wire sutures somewhat deeply placed. As on the previous occasion, the bowels were quieted by opiates throughout the week. The quilled sutures were removed after forty-eight hours, and others in seven days. On the removal of the quilled sutures a few drops of pus exuded, and the parts around showed some little redness and induration, but these symptoms were relieved by a bread-and-water poultice.

Within a fortnight after the second operation the patient left the hospital entirely cured.

TWO CASES OF SUFFOCATION BY COAL-GAS TREATED WITH INHALATION OF OXYGEN GAS; WITH OCCURRENCE OF PNEUMONIA IN ONE CASE, AND RECOVERY IN BOTH.

(Under the care of Dr. Sieveking.)

We saw the men whose case is subjoined a few minutes after their admission into the hospital; and Mr. Edmund B. Owen has kindly supplied us with the following particulars:—

Samuel S——, aged fifty-five, a stableman, and Frederick E——, aged thirty-three, a coachman, were admitted into the Albert ward at 1.45 P.M. on the 7th of January. They were in a state of insensibility. A friend, who had been to the stables that morning at 12.30 to call them, was unable to obtain admission. He therefore broke open the stable-door, and went upstairs, where he found them lying on their beds, and as he thought, dead. There was in the building an overpowering odor of gas, which he found was freely escaping through an elliptical fissure in a metal gas-pipe which was fixed to the wall opposite one of the stalls in the stable. It is supposed that the damage to the pipe was caused by a kick of one of the horses. It seems that, on the previous day, the men had come up from Bath with four horses, and had stalled them in their new quarters, which were evidently not considered altogether satisfactory; for after they had gone to bed at 2 A.M., they were awakened by a disturbance caused by the horses kicking the sides of their stalls. The man S—— went down, but failed to discover the cause of their dissatisfaction. There was no escape of gas taking place at that time. They were similarly disturbed at about 4 A.M.: and this time they were both unable to get down stairs. Their arms were stiff, and their hands trembling; and S—— said, "I am all paralyzed." To which the other replied, "Why we must both have got fits," which they could not account for, as they had gone to bed perfectly sober. Then feeling quite stupefied, they threw themselves on to their beds, and could recollect no more.

They must therefore have been under the influence of the gas for at least nine hours before being rescued. When they were admitted, Mr. Owen could not feel S——'s pulse at the wrist, possibly on account of the trembling motion of his hands; but his heart was beating 100 per minute. His elbows were immovably fixed; his feet and hands were icy cold; pupils of normal size and equal. There was great lividity of the skin. Feet-warmers and mustard poultices were freely applied, and some brandy was administered. Sensibility gradually returned, and his circulation improved, so that in an hour and a half he could utter a few disconnected sentences. The temperature of his axilla three quarters an hour after his admission was 98·6°.

Dr. Sieveking wishing to try the effects of the inhalation of oxygen gas on him, it was given to him as soon as it could be obtained from Mr. Barth, of Bloomsbury, compressed in an iron flask. Preceding its administration his pulse was 72 and very weak; towards the termination it became much fuller, but was not increased in frequency. After the inhalation it was almost bounding, and the patient, of his own accord, said he felt much lighter in his head, and that he had lost all drowsiness and stupid feeling.

The patient slept well all night, but the next morning said that he did not feel nearly so well, as he was sick and had a pain in his chest. His breathing was oppressed; pulse 64, and very full; tongue moist and clean. Percussion over his chest was resonant in front; but dull in the right infra-scapular region, where sibili with some fine crepitations were heard and tubular breathing. At 3 P.M., Dr. Sieveking ordered eight ounces of blood to be taken from his arm, after which the patient expressed himself as feeling much better, and his breathing became easier.

On the following day he said he felt quite well, and he had lost all signs of pneumonia.

Next day he was discharged from the hospital, cured.

The other man's symptoms were exactly similar to S——'s on admission, but less marked, he had slept in the back room, which did no communicate directly with the small landing the head of the stairs, but was shut off by a door. His pulse was 120, and very weak. His treatment was the same as in S——'s case, and h became conscious earlier. His pulse before th inhalation of oxygen was 126, and weak; afte wards 128, and full; and the stiffness in hi arms, which had been persistent up to that ti had altogether disappeared. The patient notice this difference immediately, and commenc flexing and extending his arms to show ho supple they were. He had also lost all the gi diness and pain in his head.

On the next day his pulse was 80, and full, he had no headache. The only bad effects th he had received from his suffocation or rath from the treatment for it, was the smarting caus by the application of the mustard plasters on t chest.

He was discharged as cured on the followi day, Jan. 9th.

The quantity of oxygen gas employed in ea case was about five gallons, which the patie inhaled in an undiluted state, no atmospheric entering between the mouth-piece and the lip It was transferred from the iron flask into one the bags of Clover's chloroform apparatus, which the ordinary mouth-piece was fitted.

UNIVERSITY COLLEGE HOSPITAL.

THE USE OF CARBOLIC ACID.

Carbolic-acid dressings have been extensivel used in this hospital during the last six month and are now ordinarily employed. We are in debted to Mr. Cluff, late house-surgeon, for a interesting and elaborate account of the result and regret that our space will not permit us give more than a brief glance at the principal points to which he alludes. Experience has shown that the greatest exactitude is requisite for the dressings to be successful; and with this attention no doubt is entertained that antiseptic dressings diminish the amount of suppuration, and expedite the cure. For out-patients generally, the use of the chloride of zinc, according to Mr. De Morgan's method, is thought to offer superior advantages to carbolic acid, because less minute care is required in its application, and its effects seem more permanent. Mr. Christopher Heath speaks in high terms of its efficacy.

As regards carbolic acid, the strongest solution in use is made with one part of acid to four of boiled linseed oil; and this is rarely used, except for compound fractures, and such like cases. The solution commonly employed is one containing one part of acid to ten of oil. Still weaker solutions—one to twenty of water, and one to forty of water—are also in common use. The former is employed for washing out wounds that have been exposed to the air for some time before being dressed; and the latter is the ordinary detergent lotion of the hospital, used for washing wounds after operations, and as a protective wash when the outer dressings, afterwards applied, are subsequently changed. The lac-plaster suggested by Mr. Lister has been used in all available cases with good results.

Great importance is attached to the securing a free exit for the discharge which drains from a wound in the first twenty-four hours. The importance of attending to this point was long since pointed out by Mr. Lister; and it is believed that some of the failures in the early experiments with carbolic acid at this hospital were due to the neglect of this. This discharge is in no way effected by carbolic acid as regards its quantity; the acid prevents its decomposition. An important question is, What is the effect of antiseptic treatment on the constitutional condition of the patient, and on his chances of ultimate recovery? Mr. Lister's views on this point are well known; and the experience of this hospital goes to confirm them in every essential particular. Mr. Lister teaches that with carbolic acid dressings the febrile disturbance which follows operations is notably lessened; that suppuration is enormously diminished, and that the really perilous form of suppuration — that, namely, which he has designated "septic," and which depends on the irritation produced by the decomposition of the discharges,—is altogether abolished; that, as a consequence of this, the perils of hectic and pyæmia are reduced to a minimum; and that, as the result of the whole, cicatrisation and recovery are accelerated. We shall glance at these points *seriatim*.

First, as to the pyrexia immediately following the operation. A number of careful observations have been made on this point by the house-surgeons in the course of last summer, with this general result,—that after all capital operations a decided elevation of temperature is found, ranging commonly from 100° to 102° Fahr., whether the wound be dressed with carbolic acid or otherwise; but that with carbolic-acid dressings the fever is less severe, and is of notably shorter duration. Individual cases differ much in this respect; in some cases dressed by the old method the febrile disturbance may be insignificant, while in some dressed antiseptically it may be severe, and this without any assignable cause. But a broad review of a number of cases treated by the two methods points to the conclusion stated above.

Secondly, as to the effect of carbolic-acid dressings on suppuration. It is rarely or never found that a wound of any considerable size heals under carbolic-acid dressings without the formation of some pus. But this pus, in a successful case in which the antiseptic effect has been thoroughly attained, is always inconsiderable in quantity, and altogether free from smell, and is evidently secreted in great part, if not entirely, by the granulating surface at the part of the wound left open for the escape of discharges under the irritation of the carbolic-acid dressings, with which the granulations are necessarily in contact. If the suppuration extends farther, or if the pus secreted gives evidence by a fetid smell of having undergone decomposition, the antiseptic treatment has, *pro tanto*, failed.

On the whole, the best general results have been obtained in connection with the opening of abscesses. Some of these cases have been remarkable successes; and there has not been one failure, nor a single case in which a doubt was entertained about the antiseptic treatment having done positive good. In compound fractures, too, the average of success has been high; and there has been, in particular, one very notable case of a middle-aged man, under Mr. Marshall's care—a compound and badly comminuted fracture of the tibia in its lowest third, to which were superadded a compound fracture of the fibula and severe laceration of the soft parts,—a case apparently, at first sight, demanding immediate amputation. The absence of constitutional disturbance in this case was extremely remarkable; after the second day the man had literally none whatever, and the deep parts of the wound closed in with the formation of hardly any pus. The fracture was firmly united when he left the hospital.

In the treatment of wounds of all kinds, whether produced by surgical operation or by accident, the success has been of a more moderate kind. Many of the cases would have recovered as soon under ordinary treatment, provided no complication — especially the terrible one of pyæmia — had supervened; but, on the whole, the belief is that, though in many of these cases the time of convalescence may not have been accelerated, in a very great number the constitutional disturbance, and in nearly all the amount of suppuration, were diminished. It so happened that during the earlier months of last year, pyæmia was exceedingly rife in this hospital. Patient after patient perished by it; and indeed recovery after amputation of a limb was almost becoming an exceptional rarity. This endemic of pyæmia continued up to the date at which carbolic-acid dressings began to be used. Not one of those treated antiseptically died of pyæmia, or indeed ever had a pyæmic symptom.

Phlegmonous erysipelas has not once occurred here in connection with antiseptic dressings in the wards. Among the out-patients several cases presented themselves; but in all the dressings had been tampered with, and the wound (in the arm in most of the cases) had not been kept at rest. It was the occurrence of these and other similar cases that led to the comparative disuse of antiseptic dressings in the casualty-room.

Secondary abscesses and sloughing of the skin are occurrences of infinite rarity now that the acid has ceased to be used in a concentrated form.

Notably, there have been more cases of persistent and uncontrollable vomiting after operations since the introduction of carbolic-acid dressings than there were before; and it is not unreasonable to suppose that the absorption of some of the acid from the raw surface of the wound superadds a new irritant to that already circulating in the blood—namely, chloroform. This vomiting is often a very serious matter, and in three fatal cases appeared to contribute no inconsiderable share to the disastrous result. It is not influenced by any remedies that have been tried; and the plan of treatment that has been found to answer best is to feed the patient by the rectum till the sickness ceases, some soothing emollient being applied to the epigastrium in the meantime.

In a few cases, where suppuration was already established, carbolic acid was tried as a curative agent, but the results were not such as to warrant a repetition of the experiments. In cases where confirmed suppuration, with an external vent, is already established, the attempt to stop it by active antiseptic measures seems to be productive of nothing but harm. The strong solution of the acid which has to be injected for the purpose seems only to irritate the pyogenic membrane, and to increase its secretion; the external dressings tend to dam up the pus thus formed; the pus has finally to be evacuated, and when evacuated is commonly found to be fetid. The history of these trials has hitherto been uniformly one of failure.'

◆

CHARING-CROSS HOSPITAL.

A CASE OF REMOVAL OF THE OS CALCIS FOR CARIES.

(Under the care of Mr. Edwin Canton.)

The following is a striking instance of the good to be effected by timely surgical interference. For notes of the case we are indebted to the house-surgeon, Mr Thomas Dowse.

Elizabeth H——, aged sixteen, was admitted on the 16th of Sept., 1868. She is a native of an ague locality; is of short stature, dark complexion, intelligent, and precocious. Her father died of phthisis four years ago; mother living and healthy. She has had four brothers and three sisters; two of the former and one of the latter are dead: cause unknown. The others, who are living, have suffered more or less from strumous disease of the cervical glands. She has never menstruated. It is now three years since she felt, after walking, an aching pain in her right heel. This was in a few days succeeded by swelling of the inner part of the foot, just below the malleolus, which for a time subsided after a little rest. This occasional state of pain and swelling, after using the foot, continued for a month or six weeks; until the part became persistently swollen, and she was unable to walk at all. Very shortly after this, a small fistulous aperture ulcerated its way through the skin, where the swelling was dependent. Below the internal malleolus, and through this a purulent discharge continued to flow for a twelvemonth. After the discharge commenced, the pain became less, and she made use of the foot. The aperture, however, closing, and the pus finding no exit, the heel again commenced to swell, and in a very short time the integument ulcerated, pus being again freely discharged. These swellings and discharges continued for some time, fresh ulcerations occurring as the old ones healed. The pain was not continuous; it occurred in paroxysms for a few days together.

When she came into hospital, the heel and parts around the malleoli were very much swollen, hot, tender, and painful. She was unable to put the foot to the ground. The pain at this time was almost continuous, of an aching, pricking character, usually worse at night. There was considerable discharge from eight or nine fistulous openings, which were found by probing to be in direct communication with the bone, the latter being found rough and porous. Perfect rest was enjoined, together with nourishing diet. Still the disease progressed, and Mr. Canton decided upon removing the os calcis, which he did in the following manner:—

The patient being placed under the influence of bichloride of methyl (which is always used in this hospital in preference to chloroform) an incision was made over the calcaneocuboid articulation, extending midway into the sole of the foot; thence extending longitudinally backwards, and continued over the posterior surface of the os calcis as high as the tendo Achillis. The flap was then removed from the outer side, the tendo Achillis next divided, and the dissection continued close to the bone on the inner side. All the various ligaments were then divided, and so the bone removed. The operation was almost bloodless, and no vessel required twisting or tying. The flaps were brought together by one or two metallic sutures, the wound dressed with carbolic acid (one to forty), a light bandage applied, and the limb placed upon a splint. Although the wound did not heal by first intention, healthy granulations soon sprang up, and union was complete in a few weeks. The os calcis when removed, was found very light, porous, and excavated, still, however, retaining in great measure its original contour.

It is worthy of notice, that the disease was confined to the bone itself, and did not affect any adjacent structures. The girl can both flex and extend the foot. There is a good cushion of tissue to represent the heel, which will in time become consolidated sufficiently to allow her to use the limb as she likes.

THE USE OF CARBOLIC ACID.

Mr. R. Barwell tells us that he has gradually adopted carbolic acid for a larger and larger class of cases, including wounds (recent and old), burns, syphilitic sores (primary and secondary), certain skin diseases, and sundry other maladies. Of the forms wherein he has used the acid, it need only be said that the lotion (from ten to fifteen minims of carbolic acid glycerine to the ounce of water) is that which he finds most readily applicable; a sort of thick ointment or putty, made of the acid mixed with oil and whitening, he also occasionally uses. The multiform plasters described by Mr. Lister require much time in their application, and his slight experience of them does not encourage him to expend such time on them.

Recent wounds (*surgical*).—In two cases in which Mr. Barwell opened the palm widely, the lotion was applied to the whole wound, deep and superficial, which was also covered with putty, spread thickly on lint. One case healed without suppuration; in the other that action was but slight. In one case of excision of the shoulder-joint, the external wound tended to heal even too rapidly, and the opening necessary for the escape of deep pus had to be kept artificially pervious.

Recent wounds (*accidental.*)—Of these we may select two men severely wounded with glass during the burning of Her Majesty's Theatre. The wounds healed, not by first intention, but rapidly by a sort of dry, or nearly dry, granulation. The same means produced the rapid healing of a deep and very jagged wound received in the boiler explosion in Charles-street. This wound closed in twenty-four days.

Burns.—When the blistered cuticle separates, the lotion appears to produce more rapid healing, Mr. Barwell thinks, than any other application. There is less pain and less suppuration, therefore less exhaustion, than with other modes of dressing.

Syphilis.—Among a large number of patients with primary sores, those who had used carbolic acid lotion properly have been freer from buboes. The sores have healed, and induration disappeared more rapidly than with those who had not the lotion. He has strong reason to believe that the occurrence of secondary symptoms is less frequent, *cæteris paribus*, among those using the lotion; but the time has been insufficient for arriving at any absolute conclusion; and the proverbial uncertainty belonging to out-patient practice also precludes his speaking positively on this point.

Two cases of favus, and three of porrigo, were successfully treated by this lotion. A patient with scabies thus treated was rapidly getting better, when he disappeared from the *clinique*.

GUY'S HOSPITAL.

CASE OF AORTIC DISEASE, ATTENDED WITH ANGINA PECTORIS, IN WHICH NITRITE OF AMYL, CHLOROFORM, AND SUBCUTANEOUS INJECTION OF MORPHIA, WERE EACH USED WITH BENEFIT.

(Under the care of Dr. WILKS.)

The presence of cardiac valvular disease distinguishes this case from that published by Dr. Fagge, in which the nitrite of amyl was used without benefit. It appears doubtful from Dr. Lauder Brunton's paper whether in his cases the angina was simply owing to fatty degeneration of the heart and ossification of the coronary arteries, or was co-existent with valvular disease.

The history of the case is as follows. J. S——, aged thirty-five, was admitted into Stephen ward Oct. 21st, 1868. Patient is a laborer, and used to very heavy work and exposure to all weathers. Had typhus fever at the age of twelve. Had always enjoyed good health till four years ago, when he began to suffer from palpitation of the heart, so severe sometimes as to cause him to fall, unless he could rest somewhere. A year since he was in the hospital under Dr. Habershon's care for cardiac disease. Six or seven months ago he had an attack of pain which extended from the region of the heart to the left side of the neck, the left shoulder, and the inside of the left arm, but lasted only a few minutes. This pain returned about every other night till six weeks ago, when it occurred nearly every night, and has continued to do so ever since. At first the attacks lasted about ten minutes, but lately much longer—even for two hours and a half, and on one occasion for five hours. The pain is preceded by an aura, which consists of an aching pain in front of the left elbow, and precedes the attack for about ten minutes. It generally occurs in the night after a hard day's work, or else on waking in the morning: it causes dyspnœa and great anxiety. No history of syphilis. Has not had rheumatic fever. Has always been a temperate man. One sister died of phthisis, and another is now laid up with the same affection.

The patient is a powerful, plethoric, unintelligent-looking man, with a florid face. His muscular system is well developed, but there is absence of the lower part of the left pectoral muscle and the left nipple. He has a short thick neck; the cervical glands are considerably enlarged, and so are the left axillary. Skin healthy. Left pupil considerably more dilated than the right. Respiration generally easy, but occasionally oppressed. Respiratory murmur good. Pulse irregular, splashing, dicrotous, compressible, 72. Heart's action irregular; there is a diastolic and a systolic bruit over the aortic valves. Urine copious; specific gravity 1023; contains neither albumen nor sugar. Bowels regular. Tongue moist; slightly furred.

Dr. Wilks ordered him five minims of tincture of aconite in an ounce of water thrice a day. He continued taking the aconite for twelve days, but the attacks of angina continued. Dr. Wilks then ordered him a drachm of tincture of senega in an ounce of the infusion of senega three times a day, and, at Dr. Fagge's suggestion, gave directions that the nitrite of amyl should be used on the next occasion. Accordingly, on Nov. 12th, at 11 P.M., the man having an attack of angina, the house-physician, Mr. Reg. Stocker, tried the effect of the inhalation. The following are his notes:—

Had an attack of angina, which had already lasted ten minutes. An inhaler of lint soaked with the nitrite of amyl was applied over the nose. He continued to breathe quietly for about half a minute, when the respiration became more hurried and labored and the cheeks somewhat flushed. The inhaler was removed. He said he was free from pain at the chest, but that he had cramps in the calves of the legs and (pains) in the ankles; these pains subsided after a minute or two, and he then complained only of numbness of the left arm. The pulse was full and slow during the inhalation, but became more rapid on discontinuing it; the surface of the chest also, and the face, which before had been cold and moist, became warmer.

Nov. 13th.—To-night, the inhalation was repeated, with precisely the same effects, the cramps in the legs appearing on the subsidence of the pain at the heart.

17th.—10.30 P.M. Had been in pain about half an hour; he did not think it was leaving him; at times he felt better of it, but the spasm returned as bad as before. He was injected w one-third of a grain of the acetate of morphia over the cardiac region. In about four minutes he said he was free from pain, but had much numbness of the left wrist. He said the pain had disappeared gradually.

27th.—10.30 P.M. Had an attack of angina, which had continued five or ten minutes. He inhaled the vapor of chloroform from a lint inhaler for two minutes and a half, with free access of air. At the end of that time he was free from pain. Presently he complained of his legs being fixed; they were moved into a more comfortable position, and he said they then felt easy; there was no pain nor cramps in them.

Between the above dates he had attacks of angina, but nothing was used to allay them. The patient says he prefers the morphia injection to the inhalations.

◆

WESTMINSTER HOSPITAL.

CLEFT PALATE IN A CHILD AGED FIVE YEARS; OPERATION WITHOUT CHLOROFORM; SUCCESSFUL RESULT.

(Under the care of Mr. FRANCIS MASON.)

This patient was a boy aged five years, having a congenital fissure involving the whole of the soft palate, upon whom Mr. Mason operated in October last, without administering chloroform. The edges of the fissure having been pared, three silk sutures were introduced, which were removed on the third day. Union was complete throughout from the extremity of the uvula, with the exception of an almost imperceptible pin-hole near the hard palate.

Mr. Mason said that he had purposely commenced the operation by paring the edges of the fissure, because dividing the muscles was a painful process, and was sometimes attended with smart hæmorrhage, which would probably have alarmed so young a patient. The process of paring the edges was comparatively painless. He had taken great care to dissect each side off in one continuous piece, so that there might be no doubt as to the whole surface being raw. The little patient had behaved remarkably well up to this point; but, on an attempt being made to introduce the needles carrying the sutures, he closed his mouth resolutely, and it was necessary to use a screw-gag to keep it open. This was easily effected, and the operation completed without further difficulty. The parts came together so well that it was thought unnecessary to divide the muscles.

Mr. Mason believes that this patient is the youngest ever operated upon successfully without chloroform. He objects to chloroform on account of its frequently causing vomiting, which is a matter of some importance to be avoided after the operation of cleft palate. He thought that an attempt should be made to close the fissure as early in life as possible, so that the patient might have a better chance of losing by education the peculiar nasal twang always more or less associated with cleft palate.

THE USE OF CARBOLIC ACID.

Mr. Holt finds carbolic acid, as applied in accordance with the directions given by Mr. Lister, a very valuable remedy. He has tried it in a large number of cases, and although it does not always succeed, he believes this is more from failing health on the part of the patient than from any defect in the remedy. In the main, however, it can be relied upon. Indolent, deep abscesses, sinuses, unhealthy ulcers, and such like, are much benefited by its application, and in recent operations, if the directions are thoroughly carried out, it certainly promotes immediate union.

◆

LONDON HOSPITAL.

THE USE OF CARBOLIC ACID.

At this hospital, Mr. Maunder has employed carbolic acid under various circumstances,—in the treatment of large chronic abscess, in acute abscess of bone, after the removal of mammary tumors, in incised operation wounds (as, for instance, hernia and ligature of the arteries), and as a dressing after amputations, both primary and secondary. The most important and interesting case in which Mr. Maunder used the drug was one of ligature of the left common carotid artery, in a private patient, the subject of three surgical aneurisms. The ligature having been soaked in a strong solution of acid, was cut short, a weak solution was poured into the wound, and all the sponges and instruments employed in the operation were dipped in the acid solution. The wound was closed over the ligature, and thick pads of lint saturated with carbolic oil were adapted to the wound, and the outer pad was occasionally moistened with the oil. Six days subsequent to the operation the wound was dressed with carbolic putty, when neither swelling, nor redness, nor secretion was observed. The wound closed over the ligature, and in less than a month the patient went to the seaside. Mr. Maunder is of opinion that carbolic acid tends to prevent and arrest suppuration, to prevent decomposition in abscess cavities, to prevent local inflammatory action, and general inflammatory or traumatic fever. Thus, he thinks, the healing process is expedited, and the dangers of accident and operation wounds greatly diminished.

◆

GREAT NORTHERN HOSPITAL.

RETENTION OF A FARTHING IN THE FOOD-PASSAGE OF AN INFANT FOR SIX MONTHS.

A child seventeen months old was brought to this hospital in June last, having, it was said, managed to swallow a farthing. It did not, however, show signs that any article so unsuited to digestion had been taken. The house-surgeon, Mr. P. D. Hopgood, prescribed as much solid food as possible, and small doses of castor oil but the farthing was not forthcoming, and the patient disappeared. A few days ago, however, the child was sick after taking an unusually heavy meal, and in the midst of the vomited matter a green mass was seen, which was the farthing, much covered with verdigris. The mother said that the child had seemed to suffer occasionally from pain, had coughed a little, and lost flesh. Where was the farthing during these six months?

Provincial Hospital Reports.

LEEDS GENERAL INFIRMARY.

REMOVAL OF THE ENTIRE TONGUE.

(Under the care of Mr. Nunneley.)

In addition to the five cases of removal of the entire tongue described in a paper published in the *British Medical Journal* for Nov. 5th, 1866, Mr. Nunneley has since that time had seven others, all of which have recovered. Mr. J. A. Nunneley, M.B., has given us this note respecting them.

The operation has been somewhat simplified, but is substantially the same as described in the paper referred to. The eye in the broad end of the blade, which carries the wire rope of the écraseur, is now made open, so as to allow the latter to be attached without tying, and to be readily removed when necessary.

In order to ensure the removal of the whole tongue, some plan was necessary to prevent the wire rope from slipping forwards after it was placed in the desired position, and before the screw of the écraseur was tightened; in the earlier operations, hare-lip pins were thrust through the tongue, as far back as necessary, and the loop of rope put over these, which were removed when the rope was so far tightened as to be fixed. This same purpose is now effected much more easily by an instrument slightly curved to accommodate itself to the tongue, and having two branches, at the end of each of which is a notch to receive and push backwards the rope, by which means the latter is kept in position, and may be fixed to any part of the tongue, even to its extreme base.

The following are the details of the operation as Mr. Nunneley now performs it:—A sharp-pointed blade, curved on the edge, about four inches long, and having in the broad end an open eye carrying the wire rope of the écraseur, is passed about midway between the jaw and the os hyoides, but rather nearer the former, and exactly in the median line, into the mouth, and is brought out at the frænum linguæ, and as near the tongue as possible, and the blade removed. The loop of the rope is passed over the tongue, which is drawn out of the mouth as far as possible by Lüer's tongue forceps, and is pushed as far back as necessary by the instrument mentioned above, and held until the screw of the écraseur has been tightened so as gently to fix the rope. Up to this point there has been but little pain, and the voluntary efforts of the patient have materially assisted. He may now be put fully under chloroform. The screw of the instrument is steadily and deliberately tightened, and the tongue gradually cut through.

Twice only has there been any hæmorrhage, and in both cases the tongue was unusually soft, and had been cut through too quickly. It was in each case arrested without difficulty by a ligature.

The whole operation is perfectly easy and simple, leaves no deformity afterwards—for the small wound under the jaw heals at once,—is attended by but very little pain, is usually almost bloodless, requires but few instruments, and occupies but a short time in its performance. Each of the last three cases has left the hospital about the tenth day.

◆

TAUNTON AND SOMERSET HOSPITAL.

CASE OF AMPUTATION AT THE HIP-JOINT; RECOVERY.

(Under the care of Mr. Henry J. Alford.)

The following case is an addition to the list of recoveries after amputation at the hip-joint for disease, and it also bears testimony to the great value of Lister's aorta compressor in an operation of this kind. Hardly a drop of arterial blood was lost, and no ill effects arose in any way from the application of the instrument. Thus one of the great dangers which used formerly to be dreaded in this operation—namely, hæmorrhage—is entirely removed.

Thomas H——, aged forty-two, a laborer, was admitted on June 2d, 1866. About two years ago he first perceived a swelling, about the size and shape of an egg, in the upper part of the left popliteal space. It grew very slowly at first, and caused him no pain till a year after, when it was as big as a man's fist. He then felt pain by night, though not by day. He continued his work until September 24th, 1865. On admission, iodine was applied, and iodide of potassium given, without effect; and he left the hospital October 21st for a time, being again admitted on June 2d, 1866. He was then found to have an enormous swelling of the left thigh, chiefly at the posterior part. Its upper limit was about four inches below the level of the trochanter major, and its lower five inches below the level of the lower margin of the patella. Anteriorly the boundaries of the tumor were by no means well-defined, either above or below. The movement of the hip joint was perfect, and there was some movement of the knee. The skin, particularly posteriorly, was red and brawny, and in some places it had given way, and small, circular, unhealthy-looking ulcers were found. The leg and foot were much enlarged from œdema, which diminished on the application of a bandage and keeping the limb raised. The patient looked pale, emaciated, and cachectic, and evidently suffered great pain.

On June 12th, after consultation, amputation at the hip-joint was performed. The precaution of bandaging and raising the limb prior to operating was taken, in order to drain as much blood as possible out of it. A little brandy was given, and before the chloroform. Lister's aorta tourniquet having been applied, a long anterior and short posterior flap were made, the joint being opened and the limb disarticulated as soon as the anterior flap was completed. The femoral artery was at once ligatured. Scarcely any arterial blood was lost. Seven ligatures were applied in all, which controlled all hæmorrhage. Twelve silver-wire sutures were then applied, and the stump covered with strips of wet lint. The man was ordered thirty minims of Battley's solution, and beef-tea and brandy.—8 P.M.: Slightly sick. Ordered ice, champagne, and Liebig's ext. carnis, and also a draught containing laudanum, sal volatile, and chloric ether.

June 13th.—Has passed a comfortable night; no hæmorrhage or oozing; takes his food and wine; tongue moist; passed water freely. To repeat draught at night.

14th.—Bandage and lint removed; stump looks well; has sherry instead of champagne, and chicken for his dinner.

17th.—Takes food, and sleeps well; in no pain; no bad symptoms. Some sutures were removed.

18th.—Removed the rest of the sutures, and applied strapping and wet lint. Stump looking very healthy.

July 8th.—All the stump healed, except at the upper and inner portion, where the ligature on the femoral still remains. This came away on the 14th.

15th.—The last ligature was removed. The patient puts on his clothes, and sits up every day.

23d.—He goes into the garden daily; convalescent, but weak.

BUCKS GENERAL INFIRMARY, AYLESBURY.

INJURY TO THE HEAD; COMPRESSION OF BRAIN; GREAT DELAY IN SYMPTOMS; DEATH.

(Under the care of Mr. Hooper.)

The interest of the following case lies in the lapse of time between the receipt of the blow and the setting-in of coma. The blow must have been received about midday, and the man retained consciousness till five in the evening, and was in the interval quite able, not only to complete his morning's work, and give a satisfactory report of the same to his employers, but even to converse quite rationally with his friends afterwards. The lateral sinus must have been lacerated at once, and extravasation commenced, but the blood having to force its way between the dura mater and the skull, thus meeting great resistance to its progress, the subsequent compression was considerably delayed.

A. B——, a brewer's drayman, aged thirty-five, was brought to the infirmary between seven and eight o'clock in the evening of the 5th of August last, quite unconscious, and his hair matted with blood. On examination a depression was found behind the left ear, and on a plane above it, situate over the posterior part of the parietal, and abutting on the occipital bone. This was obviously caused by ecchymosis round the site of the blow, and not, therefore, due to fracture. The head was shaved, a cold lotion applied, and a dose of calomel administered. But coma persisted, and at half-past seven the following morning, about twelve hours after admission, the man died.

A post-mortem examination showed a large thick clot on the right side, between the dura mater and the cranium (the blood had evidently proceeded from the lateral sinus), producing compression of the brain. No fracture was found at the part struck; an extensive fissure was discovered over part of the right parietal, petrous portion of temporal, and involving the greater wing of sphenoid bone, but no depression or displacement whatever. At the inquest which followed the death, the exact way the blow was received was not made out, as no one saw it done. The man had been out with his dray in the morning, and on subsequently arriving at the brewery, about one o'clock in the day, where he gave in his accounts with *perfect accuracy*, he was observed to have blood-stains on his clothes. He accounted for them by saying that a cask fell off his dray, and, on trying to replace it, the horse started, causing the cask to fall out with a jerk, and strike his head. He was able, however, to put back the cask, and go on with his work. Other witnesses had noticed the man asleep on his dray, his body leaning outwards, thus making a probability of his falling off, and so receiving the blow. After settling his accounts at the brewery, he went to his cottage, and entered into conversation with his friends, but afterwards, feeling faint, he went to lie down, and became comatose about five o'clock in the evening.

LIVERPOOL SOUTHERN HOSPITAL.

FRACTURE OF THE SPINE WITH DISPLACEMENT; REDUCTION BY MEANS OF PULLEYS; RECOVERY.

(Under the care of Dr. Wollaston.)

J. M——, a clerk, aged thirty-six, while in a state of intoxication, walked over one of the pier-heads, and fell on to the river bed below, a distance of about forty feet. In this state he remained for four hours, until he was roused by feeling the advancing tide. He was hoisted up by ropes, and brought to the hospital.

On admission, Nov. 18th, 1868, he was unable to stand, and complained of intense pain from the toes of both feet up to the hips, and also of a feeling of stiffness in the back. On examining the back there was considerable ecchymosis of the lower portion of the dorsal region, and the eleventh dorsal vertebra was displaced, and protruded fully an inch and a half from its normal position. No crepitus could be felt. Hyperæsthesia of the lower extremities existed in a most marked degree, a breath of air, or a touch of a feather, causing the most excruciating agony. Without any stimulus paroxysms of pain came on every three or four minutes, commencing at the base of the toes. There was neither paraplegia nor priapism.

Treatment.—The patient being placed on a mattress on the floor, chloroform was administered to its full extent. The shoulders were then securely fixed, and the pulleys applied to both thighs. During extension, the hand, placed over the projecting portion of the spine, felt the displacement gradually disappear, but without crepitus or jerk. Hot-water bottles were applied to the feet, a dose of tincture of opium given, the catheter passed, and the patient directed to remain on his back.

Nov. 19th.—Has passed a restless night, the attacks of pain being most intense, and with only short intervals. Although he has been tossing from side to side, no displacement has occurred, but a slight "dip" is felt at the seat of injury. One-third of a grain of morphia was injected into the calf of one leg, and the legs elevated on pillows; catheter passed. Towards evening, as no relief was experienced, the injection was repeated in the other leg, and with immediate benefit. Temperature: upper extremity, 97°; lower, 98·5°. Pulse 98.

20th.—Feels better, and has slept for some hours; pain in feet and legs not so intense, unless touched; abdomen tympanitic, and he is unable to pass flatus; little or no pain at seat of injury; tongue coated; great thirst, and constant vomiting. Ordered iced milk *ad lib.*; injection of morphia repeated; catheter three times a day. The urine is loaded with mucus, and slightly ammoniacal. Temperature: upper, 97·6°; lower, 98·4°. Pulse 96. Respirations 20.

21st.—Feels easier; still sick. A turpentine-and-oil enema was given last night, and repeated this morning, but without effect. To discontinue the morphia, and take only soda water and milk, with ice. Temperature: upper, 99·2°; lower, 96·8°. Pulse 98. Respirations 18.

22nd.—About the same; bowels acted, but he is not aware of it; vomiting still continues; towards evening pain more severe. Hypodermic injection repeated; ordered a purgative. Temperature: upper, 99·8°; lower, 96·4°. Pulse 90. Respirations 18.

23rd.—Bowels freely moved, and patient expresses himself as feeling much better; hyperæsthesia diminishing; no sickness; tongue clean; complains of a feeling of numbness in lower extremities. Temperature same as yesterday.

28th.—Going on well; a little vomiting this morning, which was relieved by an enema; urine very alkaline. Ordered dilute nitro-hydrochloric acid, chop, and a pint of ale; placed on a water-bed, as there is a tendency to sloughing over the nates; spine firmly strapped with emplastrum Robirans.

Dec. 4th—He has daily continued to improve. The hyperæsthesia has disappeared, with the exception of a little at the outer side of each leg. Has passed urine to-day for the first time since the accident. Has been sitting up in bed, and only complains of what he calls a "galvanic" sensation in the legs. Bowels obstinate, requiring the administration of purgatives.

23rd.—Got up to-day, and was able to move about the ward with assistance. Legs feel rather numb. From this date he rapidly improved, and was able to walk about without assistance; the legs regained their proper feeling, and his only complaint is a slight feeling of stiffness in the back when he stoops to pick an object from the floor.

On January 1st he was discharged cured, with only a very little thickening at the seat of injury.

Dr. Wollaston remarks:—This case is interesting in many respects. Of course there was extensive fracture of the spine, for we cannot think it possible for simple dislocation to exist in this portion of the column; and it shows the necessity for having recource, at an early period, to those measures that will as far as possible remove all pressure from the cord. In this case we may fairly infer, judging from the amount of deformity, that the pressure must have been very great, though probably no actual rupture took place. What the consequences might have been had this pressure been allowed to continue, we can easily imagine. Knowing the fatal result of many of these cases, and the distressing nature of the suffering, both to the patient and to those in attendance, we think it justifiable—in most if not all such accidents—to follow some such treatment as that recorded in this instance. The sickness, which was a prominent symptom in the early stage, was probably partly due to the chloroform; but also in some measure, we think, to the use of the subcutaneous injection of morphia, a result we have frequently seen follow the use of the drug when exhibited in this manner.

Medical Societies.

MARCH—APRIL.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Dr. E. Meryon, Vice-President, in the Chair.

REMARKS ON THE NATURAL HISTORY OF RHEUMATIC FEVER.

BY WILLIAM W. GULL, M.D., AND HENRY G. SUTTON, M.B.

The authors are desirous of bringing under the notice of the profession a few more cases of rheumatic fever which have been treated by mint water, or, in other words, which have been allowed to run their natural course. They moreover desire to point out what appears to be the natural course of rheumatic fever with reference to the heart, and to show in what proportion of cases the heart became involved when rheumatic fever was treated by mint water. Lastly, to consider if there is any evidence to prove that the heart is more frequently involved when rheumatic fever is treated by mint water, or when treated by alkalies, by lemon-juice, or by blisters. This paper is based on twenty-five cases of rheumatic fever, twelve of which occurred in Guy's Hospital, most of them under the care of Dr. Gull, and thirteen occurred in the London Hospital, under the care of Dr. H. G. Sutton. The particulars of the twelve cases have been already recorded in the Guy's Hospital Reports, and the remaining thirteen cases are recorded in the present communication to the Society. Of these twenty-five cases, eighteen were females and seven were males. The average age of the patients was nineteen years. All the patients were suffering from their first attack of rheumatic fever, and the disease was well marked. The temperature of the body during the acute symptoms reached in some cases 104° and 103°; in other patients it was 101° and 102°. Taking an average of all these cases, the temperature was about 102° during the acute stage. The average duration of the acute symptoms, as estimated by the thermometer and general symptoms, was ten days. Taking all the cases that have been recorded by the authors, the average duration was 9·1 days. The total duration of the acute symptoms from their commencement, including the time the patients were ill before coming into the hospital, to their cessation, was on an average seventeen days. The authors next proceed to inquire if the duration of rheumatic fever is longer when treated on the expectant plan, or when treated by drugs; and they consider that no one plan of treatment has any great advantage as regards shortening the duration of the disease. Drs. Gull and Sutton agree with Dr. Barclay in considering that we are not yet in a position to say that alkalies exercise any influence in curtailing the duration of the disease. They are also of the same opinion respecting lemon-juice. With regard to Dr. Herbert Davies's blister treatment, they remark it relieves very much the pain and sufferings of the patients in some cases; but it does not appear to curtail the rheumatic process. And the authors remark, "Our cases appear to us to teach that the rheumatic process runs its course under the expectant treatment as favorably as under the treatment by drugs." Drs. Gull and Sutton next proceed to inquire what evidence there is to show that the drug treatment prevents the heart becoming diseased, and they give a detailed account of the state of the heart in their twenty-five cases. Every one of these twenty-five patients were suffering from their first attack of rheumatic fever, and twelve of the number had organic disease of the heart when admitted into the hospital; two had some, but not very well-marked, evidence of organic disease of the heart when admitted; and in eleven there was no heart disease on admission. No organic disease of the heart supervened while under treatment, and the heart was healthy when these eleven patients left the hospital. They remark the experience gained in these cases of rheumatic fever, which were allowed to run their natural course uninfluenced by drugs, tends to prove that, if patients are admitted into the hospital suffering from a first attack of rheumatic fever, and the heart is not diseased on admission, it will very rarely become organically diseased while patients are under treatment. The opinions of Drs. Garrod, Dickinson, Herbert Davies, Geo. Owen Rees, and Basham are then quoted to show that the heart did not, or very rarely did, become diseased when rheumatic fever was treated in the hospital by full doses of alkali, by blisters, by lemon-juice, or by nitrate of potash, and they observe: "It appears to us that there is not sufficient evidence to prove that any of the advocated systems of treatment have power to prevent the heart becoming diseased. In concluding that the treatment has prevented the heart becoming diseased, we have overlooked the fact that there might be no tendency at the time the patients were under treatment for the heart to become diseased, and our cases show that the good results which have been attributed to the influence of the remedies also occurred when no special remedies were used. Our cases, therefore, tend to teach that these good results were due, not to the drugs, but to the natural course of the disease." The authors then endeavor to show that when the heart becomes diseased in rheumatic fever, it does so at an early stage of the disease; and if it does not become diseased during the first week of the rheumatic fever, it rarely does so afterwards; and they give abstracts from twenty-two cases of rheumatic fever to demonstrate this.

Drs. Gull and Sutton's conclusions are as follows:—

That when the patient's heart was healthy on admission into the hospital, it was very rare for it to become organically diseased while the patients were under treatment by mint water—or, in other words, when the rheumatic fever was allowed to run its natural course.

That the evidence before the profession shows that the heart very rarely became diseased while patients were under treatment in the hospitals, and that this was the case when patients were treated by alkalies, lemon-juice, or by blisters to the joints.

That there is not sufficient evidence before the profession to prove that any of the advocated remedies have power to prevent the heart becoming diseased.

That in rheumatic fever the tendency is for the heart to become diseased during the first few days of the fever; and, should it escape the early days of the disease, there is each day a lessening tendency to its implication. Hence the cases would appear to show that, if at the end of the first week of the rheumatic fever the heart is free from disease, then there is little or no tendency for it to become diseased during the later weeks.

That the reason why the heart did not become diseased when rheumatic fever was treated by alkalies, blisters, and by lemon-juice is to be attributed, not to the influence of the drugs, but to the natural course of the disease; for the patients did not come under treatment until the rheumatic fever had been going on some days, and until the period when the heart was most liable to become diseased had passed over.

The authors conclude by saying: "Hitherto the investigation into the therapeutics of the rheumatic process has been rendered all but valueless by the deficiency in preliminary data. At present, therefore, as regards treatment, our cases seem to show that we are limited to a careful regimen of the patient. Rest, mechanical and physiological—rest in the very outset of the disease. We ought not to wait until the rheumatic process has become well developed in the joints. To regulate the temperature. To moderate excessive skin function by sponging the surface of the body. To allay pain, by placing the patient in an easy position, and sometimes by opiates. To sustain the organic nerve power by light diet, and occasionally by small doses of alcohol. To procure rest by the simplest means, especially avoiding such movements of the body as may excite the circulation. In fine, to place the patient in a physiological state of mean rest, if it may be so termed, of the nervous, the circulatory, the muscular, and digestive systems. To do this fully will often tax all our energies, and require often more consideration than is requisite for prescribing any supposed appropriate drug treatment. We are, therefore, at present, advocates of the exactest treatment of the patient under acute rheumatism, though we may doubt the value of so-called specific drugs."

DEBATE ON THE TREATMENT OF RHEUMATIC FEVER.

The discussion was opened by Dr. Fuller, who, after expressing his obligations to the authors of the paper, said that their researches as to the natural course of rheumatic fever rather served to confirm the old notion that its proper cure was six weeks in blankets; but, although they made out that nine or seventeen days was the regular course of the disorder, the facts were rather different. He had consulted Dr. Gull's second report, to which, however, he would not have referred had the facts of the present cases been read. The first was forty-two or fifty days under treatment, the second at the end of twenty-two days was doing well, the third went out at the end of forty-two days, the fifth was discharged at the end of fifty-four days, and so on. The course of the complaint was, therefore, to be five or six weeks under treatment. If they took the alkaline treatment, he found that the average of his own cases was seventeen or eighteen days till they left. Here the two systems were compared. As to the condition of heart, it was said that the liability to heart complications was greatest at first. This was quite true; but this was only saying that those parts which are most liable to attack are those which are attacked first. He must demur to the slight liability said to exist to such complications. When registrar at St. George's during four years many cases of heart complication occurred during the second and third weeks, and in his subsequent experience he had seen this over and over again. As to what was called rheumatic fever, at St. George's the term was limited to those cases characterized by fever, furred tongue, and quick pulse. The reason why alkalies were so much spoken against was that other affections, as pyæmia and acute gonorrhœal rheumatism, had been mistaken for the true complaint; for in these diseases alkalies were of no service, but under their use the patient got worse. There was no disease which yielded to treatment so readily as acute rheumatism. When he could number cures by the hundred without pericarditis, it was fair to conclude that the remedy was of some service. Alkalies were quite as good in private practice, and he would still believe in alkalies—they were almost specifics.

The President remarked that to the list of diseases confounded with acute rheumatism Dr. Fuller might have added acute periostitis.

Dr. Fuller: Yes, and many cases of gout.

Dr. Gull said when this question was taken up at Guy's he took great care to ascertain exactly the duration of the disease and the period of retention in the hospital. The only true criterion of the former was temperature; consequently Dr. Fuller's data were fallacious. They must have something more exact than the stay in hospital. Dr. Fuller also remembered many instances of heart affection occurring in the second or third week. Such complications require the greatest possible care in diagnosis when they enter; otherwise they may seem to be developed in the second or third week. This was another source of fallacy. In such cases as those reported the question of diagnosis might be put on one side. Gonorrhœal rheumatism does not occur in young girls of thirteen and fifteen.

Dr. Stewart remarked that about six years ago Dr. Gull narrated the facts of some sixty cases of acute rheumatism treated without internal remedies, and he wanted to hear more of his results; not getting these, he proceeded to make some investigations on his own account. He tried old plans, in some of which he had considerable confidence; but he found that he had little reason to be so, especially with regard to alkalies, for heart affection frequently came on when under the full alkaline treatment. He had observed fifty-six cases of acute rheumatism in 1864-66, and, on reckoning, he found that the average number of days the cases were under treatment, whether with or without alkalies, was forty-two, and heart complications were also nearly equal in both. In future, observers should agree as to the termination of the disorder. In many of his own cases the temperature had not been carefully taken, which he regretted, as he looked on the temperature as of great importance. In many cases the acute symptoms came back even after the patient had left the hospital. The question was not to be decided by hundreds or even thousands of cases, but by prolonged study extending over many years, for the fever varied in different years. The eruptions were different, and sometimes the symptoms became typhoid. In these last cases he was glad not to have given alkalies. He had noticed in the "Guy's Reports" that opium was sometimes given; he himself had never used anything except belladonna applied over the heart.

Dr. Gull said the opium was not given except when absolutely necessary, and then not against the rheumatic process, but merely to relieve pain.

Dr. Dickinson said that, as to heart disease, he doubted its frequent occurrence in hospital. Out of 113 cases of heart complication he had collected, 35 occurred in the hospital, or about 1 in 4. In 28 cases treated without alkalies 12 were seized in the second week, 7 in the third, and 6 in the fourth.

Dr. Daldy, who asked what was intended by acute rheumatism, and pointed out that many forms of disease are included under the term as commonly employed. There is the lithiasis, for which Dr. Warren the elder said that six weeks was the best remedy. Were we asked to do nothing for this? Then there is a subacute rheumatism, which resembles remittent fever plus rheumatism, and tends to a natural termination in seven, fourteen, or twenty-one days. Some of the cases recorded by Dr. Gull, in the Guy's Hospital Reports, appeared to be of this character, and the natural duration of the disease would be in harmony with the results recorded.

Dr. Handfield Jones pointed out the great dissimilarity between different cases of acute rheumatism, and insisted upon the insufficiency of the phenominal study of disease, unless it led on to something more. In rheumatism he knew only the phenomena, and treated them empirically. He thought that differences in the duration of the cases were partly due to differences in the recuperative power of patients. In cases where there was high fever and great formation of acid, acid sweat, acid mouth, acid urine, he thought alkalies were indicated, and he found them grateful and beneficial to the patients. Where there was not this tendency to acidity, he should not expect benefit from alkalies; and he had obtained good results by the use of quinine in large doses, twenty or thirty grains daily. Where there was much pain and swelling of the joints, blisters were useful; but not if there was much pain, with only slight swelling. Before attempting to arrive at results by statistical means, he thought we should determine whether what we call acute rheumatism was really one disease, in the sense in which scarlet fever or measles is a disease, or whether the term included several forms of morbid action.

Dr. Wynn Williams thought the discussion had wandered from the point, which was whether mint water or medicine should be given to the patients. He took it for granted that every practitioner knew what was meant by acute rheumatism, and could distinguish it from subacute. He had himself suffered from acute rheumatism severely, and more than once. He had tried in his own case the do-nothing plan, and also the alkaline plan, and, as the result of his own experience, he strongly advised the use of the latter. Much relief might often be given to painful joints by surrounding them with spongio-piline, soaked in a hot lotion containing subcarbonate of potash and laudanum.

Dr. Wilks thought it the duty of as many Fellows as possible to give their opinions upon the question. He was himself more or less in accord with the authors of the paper, both from his own experience and from the merits of the paper itself. After long experience, he still did not know what was the best remedy, and found that the actual cases are far from being uniform. He had used all the suggested remedies in turn, and had found them all nearly equally successful. It was quite time that such a paper should be read before the Society. He remembered a discussion four or five years ago on the same subject, in which every speaker advocated his own remedy, and in which, if a non-medical visitor had inquired whether the disease would get well of itself, no one present could have answered the question. The method pursued by the authors was the only legitimate mode of investigation, and men who did not follow it rushed blindly into the use, in all cases, of any much-vaunted medicine of the day, such as bromide of potassium, carbolic acid, or what not.

Dr. Billing had hoped that before the last speaker sat down he would have given his opinion about the utility of giving mint water—that is, of doing nothing—in acute rheumatism.

Dr. Sibson inquired whether the treatment of the authors was indeed doing nothing. He thought not. He maintained that it was doing what was both more desirable and more difficult than writing prescriptions upon paper. It was placing and maintaining the patient in the condition most favorable to recovery, and shielding him from every hurtful external influence. Nothing required so much care and skill as to do no harm; nothing was more worthy of remembrance than the Hippocratic maxim, "To do good, if possible, but not to do mischief." Was there not a common element in all the methods that had been discussed? and was not that element the warmth and rest of the hospital, as contrasted with the conditions of the patient's home? For two years past he had treated all cases of acute rheumatism at St. Mary's without internal drugs, but with much care. Many years ago he had seen a patient walk convalescent out of St. George's to return two days later with a fresh attack; and he thought that the difficulty of enforcing proper rest after pain had subsided was one of the chief causes of relapse. At St. Mary's the chief points were—1. Absolute rest in bed, insured by swathing the arms and legs in cotton wool, and by supporting the feet by pillows, so as to relieve the ligaments from their weight. 2. The removal of the pressure of the bedclothes by a cradle. 3. The removal of local pain by smearing the affected joints with belladonna liniment, sometimes strengthened by rubbing down the extract in it. He attached little importance to the mere duration of the cases, and all importance to the safety of the heart. He believed that the plan he had laid down, by causing the heart to be called upon for a minimum of exertion, did preserve it from risk in a very great degree. If the articular pain were very severe, with much redness and swelling, he would apply a few leeches; if without much redness, he would inject a little morphia under the skin. He objected, on principle, for himself, to the peppermint water, not approving of pretended medication. For the anæmia and weakness of convalescence he gave a little iron and quinine.

Dr. Billing rejoined that, although giving mint water was doing nothing, the plan they had just heard could not be so described. It was, however, not the work of a physician, but of a nurse. He was well assured that there was a better method of treating acute rheumatism than by the administration of mint water.

Dr. Anstie confessed himself to be without distinct belief in the efficacy of any treatment other than that described by Dr. Sibson. Still, the use of alkalies had not been scientifically condemned; and there appeared to be a good deal of evidence from experience in favor of them. Before giving them up as of no value, we ought to ascertain whether those who fail with them carry them far enough, and really produce alkalinity. In some hospitals, he knew, this matter was carefully tested; but he thought many failures were, perhaps, due to the treatment not being carried far enough. A friend, whose absence he regretted, and whose name, which, in his absence, he would refrain from mentioning, would be recognized as that of one of our best observers, was in the habit of using alkalies in very large doses, and with marked success. The use of nitrate of potash was sometimes erroneously described as alkaline treatment; this salt being in no therapeutic sense an alkali, but a sedative of very peculiar character, and owing any efficacy it might have to its sedative properties alone. He deprecated leeching under any circumstances, and thought the hypodermic injection of morphia the best method of relieving pain.

Dr. Leared inquired whether there was any reason to believe in the actual presence of lactic acid in the blood of rheumatic patients, and whether the perspiration became alkaline under alkaline treatment.

Dr. Reginald Thompson said that, as Registrar of St. George's, he wished to state that exactly 100 cases of acute rheumatism had been admitted into the hospital during the years 1866-67. Of these cases, 48 were admitted with heart complication, 21 were attacked by heart complication while in the hospital, and 31 remained free. Twenty-three were cases of pericarditis, of which 6 in each year came on after the patients had been three days in hospital. Excluding these patients, whose stay was protracted, the average stay in hospital was 22 days in 1866, and 26 days in 1867. Alkalies were given in large doses, and the urine was always rendered alkaline. The average stay in hospital of the cases complicated with pericarditis was 46 days; and in the cases in which the date of the commencement of the attack could be accurately determined, it occurred in one case on the 9th day, in two on the 11th, in one on the 22d, and in one on the 49th. The crisis of the disease was usually on the 7th, 8th, or 9th day.

Dr. Habershon observed that he thought the frequency of relapse bore some proportion to the depressing effects of previous treatment; and believed that he had seen morbid irritability and other bad symptoms in connection with the use of very large doses of alkalies.

Dr. Dickinson wished to supplement his observations in the former debate by saying that, when Registrar at St. George's, he saw a large number of cases of acute rheumatism, treated by different methods, and under the care of different physicians. Of 110 patients treated by different methods, among which might be mentioned bleeding, and the use of mercury, of guaiacum, and of iodide of potassium, 35 had endocarditis or pericarditis, coming on in the house after treatment was commenced. Of 47 patients treated by alkalies, there was only one in whom the commencement of heart disease was discovered after admission. This was a case of pericarditis. Alkalies should be used with discrimination and care, and only in the cases of acute acid rheumatism, which are precisely those in which the heart is most prone to be attacked. He believed that the alkaline treatment shortened the duration of acute rheumatism to some extent, but that its great value was in the protection it afforded to the heart. He would be glad to hear how the hearts had fared among Dr. Sibson's patients at St. Mary's.

Dr. Sibson had not then strict statistics upon the point; but was able to say that he had never before had so small a proportion of cases of heart disease. Without comparison with the statistics of other hospitals during the same period of time, it would be impossible to say how far this might be due to the treatment. He had been astonished to find how few patients went out with apex murmur.

After some remarks from Mr. Macilwain,

Dr. Sutton briefly replied. He said that Dr. Fuller had complained of the omission of the dates at which the patients left the hospital. These dates were wholly unimportant, because some patients had been kept in hospital to test the permanence of the cure; others until arrangements were made to send them to the country; others for other reasons. With regard to diagnosis, he admitted that it was not always easy to draw a line between rheumatic fever, acute rheumatism, and some cases of acute gout. He believed all the cases in the paper had been fairly named. Many of them were in young females; and certainly none of them were gonorrhœal rheumatism. Touching the date of the commencement of pericarditis, he called attention to the possibility of overlooking the very strictly localized creak, which sometimes exists for three or four days before being developed into a well-marked murmur.

◆

OBSTETRICAL SOCIETY OF LONDON.

Dr. Hall Davis, President, in the Chair.

Dr. J. B. Hicks exhibited the Head of a Fœtus, which had been delivered, after perforation, by the assistance of the cephalotribe. The antero-posterior diameter of the maternal pelvis was about three inches, the fœtus very large, and the head highly ossified. The instrument had seized it obliquely over one orbit and the occipital bone on the opposite side. The calvaria was crushed in on to the base, and the delivery was effected without difficulty. Dr. Hicks pointed out the great facility and safety with which the head was abstracted after crushing, compared with the use of the crotchet or craniotomy forceps, which he thought it was destined, in a great measure, to supersede. He remarked that there seemed to be a difficulty with some writers in dissociating cephalotripsy from utter crushing of the head, whereas in most cases the effect was rather to crush down the vault into the base; the fact being that it was impossible to secure the base steadily between the grip of the blades. Very frequently the base tilted so that the flattening of the skull was effected in a vertical rather than a lateral direction. This produced the same advantage, because in this case the instrument would compress down to an inch and a half, through a pelvis of which size it would rarely be possible to deliver by the cephalotribe; while in lateral pressure the long diameter of the head would remain, instead of the transverse, as in vertical pressure.

Dr. Meadows exhibited a new Vaginal Speculum. It resembles Cusco's in regard to the two blades, upper and lower, whose divergence is effected by a simple act of pressure; but to prevent the lateral folds of the vagina from falling down between the blades, and obstructing vision, Dr. Meadows has adapted another narrow blade to each side, making four blades in all. These latter, when the instrument is closed, fall within the two larger blades, and are so hidden as not to interfere with easy introduction. The same act of pressure expands all four blades at once.

Dr. Gervis exhibited a large Polypus Uteri. This specimen was taken from a patient whose labour, owing to the large size of the growth, and unusually extensive attachments to the cervix uteri and vaginal walls, had to be terminated by craniotomy. On the fifth day after the confinement, the tumor was removed by the single wire écraseur. The patient did well for some days, but ultimately succumbed to an attack of peritonitis, which, as appeared from the post-mortem examination, was unconnected with any pelvic mischief. The section of the cervix was healthy and healing, and the structure of the uterus, its peritoneal surface, and that of the broad ligaments, were free from any trace of inflammation; while, on the other hand, the coils of the small intestines were extensively agglutinated together by effused lymph. On section, the polypus displayed, in its interior, an oval fibrous tumor, enveloped in a capsule of true uterine tissue, which had been at the upper part continuous with that of the cervix. It is worthy of note, that during the first four months of her pregnancy, the patient had been subject to profuse hæmorrhage.

Dr. Routh exhibited for Dr. Griffith a curious Monstrosity. Extreme difficulty had been experienced in the delivery of this child, owing to the projection from the chin of a large bag containing fluid, and, in spite of craniotomy, the delivery could not be effected until this bag had been tapped. The mother did well.

Dr. Andrew Brown exhibited the uterus, fœtus, and parts concerned in a case of Extra-uterine Pregnancy, in which death had occurred when gestation was advanced to about the fifth month. The illness, which followed an accidental rupture of the cyst, was short. During life she was not attended by any medical man. Details of the post mortem were given.

Dr. Greenhalgh read a paper on a case of probable Rupture of the Uterus. The patient had reached the seventh month of her sixteenth pregnancy, when, after lifting a heavy weight, she was suddenly seized with agonizing pain in the abdomen, followed by collapse. Acute peritonitis set in, and symptoms of a typhoid character. The uterus then became greatly distended, and in the umbilical region resonant on percussion, evidently from gaseous accumulation internally, owing to the decomposition of the fœtus. The membranes were then punctured, giving exit to a large quantity of fetid gas and turbid liquor amnii, and in about ten hours the fœtus was expelled. The patient regained her former health.

The points of interest in the case were discussed at length.

◆

PATHOLOGICAL SOCIETY OF LONDON.

MR. SIMON, President, in the Chair.

Dr. Murchison read reports by the Committee on Morbid Growths, on Mr. Heath's case of tumor of the tongue, on Dr. Kelly's case of cancer of the femur, which was declared to be fibroplastic, and on Mr. Adams's case of syphilitic tumors of the leg.

Dr. Peacock exhibited a Malformed Heart, removed from a child aged thirteen, and presenting occlusion of the orifice of the pulmonary artery by adhesion of the valves. The aorta arose from both ventricles; the foramen ovale was closed. The question as to how blood got into the pulmonary artery was undetermined, for the simple reason that no special examination had been made touching this point by the gentleman who sent the heart to Dr. Peacock. The latter commented on the importance in cyanotic cases of determining, not only the condition of the heart, but the mode in which the circulation was carried on through the vessels in connexion with it.

Dr. Payne exhibited specimens of Multiple Vascular Tumors of the Liver, Ovary, and other organs. The tumors were composed of dilatations of venous channels containing coagulated blood. In the case of the liver the tumors were in connexion with the portal vein; those related to the kidney were injected through a branch of the renal artery. There were also tumors about the ovary. Dr. Payne did not find any similar case in which the tumors were so large or so numerous. The patient died of hæmorrhage from the intestine.

Dr. Bastian showed specimens of Embolism in Minute Arteries of the Pia Mater (which he thought might be connected with the production of delirium) taken from a patient who died as a consequence of an attack of erysipelatous inflammation of the head. In the small arteries and capillaries were a large number of white corpuscles aggregated into masses, the larger being about 1-100 in. in diameter, and plugging up the calibre of the vessels. Some of the masses were becoming granular and fatty. Embolic masses existed in the liver and the kidney. Dr. Bastian had examined cases of pneumonia, rheumatic fever, and other fevers in which delirium occurred, and found similar masses.

Mr. Barwell thought that the delirium and the massing together of the corpuscles were the result of the inflammation, and not the delirium the result of the formation of the aggregated masses.

Dr. Murchison did not think that Dr. Bastian had shown that these masses were formed during life.

Dr. Bastian said there was no trace of inflammation in the vessels; but that secondary changes around the masses were taking place as in the liver.

◆

CLINICAL SOCIETY OF LONDON.

SIR THOMAS WATSON, President, in the Chair.

Mr. Moore read an account of a case of Severe Inflammation about the Hand and Forearm, which was treated with marked benefit by acupressure of the brachial artery.

Mr. Durham referred to the importance of endeavoring to lessen the arterial supply in similar cases by the position of the limb. He thought acupressure a severe measure for the treatment of these cases.

Mr. Carter suggested the employment of digital pressure of the main artery of the limb.

Mr. T. Smith referred to the amount of local irritation caused by the needle.

Mr. Maunder insisted upon the care which should be taken in the selection of cases, and stated that it was not so much a question of the method employed as of the principle involved in the arrest or cutting off of the supply of blood to the inflamed parts.

Mr. Heath alluded to the desirability of trying the effect of drugs in local inflammations. He instanced the use of tartar emetic and belladonna, as showing their utility in certain cases.

Mr. Moore replied that he was desirous of simply placing the case on record, as it seemed to him that, in this instance, the remedy had been efficacious.

Mr. Thomas Smith brought before the Society an interesting case of Rupture of the Intestine, in which the bowel was punctured before death to relieve its extreme distension. He referred to various cases in which a similar plan of treatment had been employed, and pointed out the comfort which the patient derived from the use of so simple a remedy.

Dr. Fagge narrated a case which had been under Mr. Birkett's care at Guy's Hospital, in which great temporary relief had followed the operation.

Mr. Holthouse said this plan of treatment was advocated by Mr. Phillips. He commented on the desirability of puncturing the bowel with a needle in certain cases of hernia as facilitating reduction of the intestine.

Mr. Durham referred to Mr. Stocker's experience of the operation and the utility of the measure in the treatment of a case of strangulated hernia which had come under his notice.

Dr. Stewart pointed out the efficacy of belladonna injections in cases of over-distension of the bowel with flatus.

After some remarks from Mr. Bruce,

Mr. T. Smith expressed a doubt whether a needle would be found as useful an instrument as a fine trocar. He, of course, regarded the operation as one to be practised only after the failure of other remedies.

Editorial.

PUERPERAL PERITONITIS.

An interesting discussion has been taking place during the last few weeks in the French Imperial Academy of Medicine, in reference to the etiology and treatment of puerperal peritonitis, the leading points of which we shall here briefly note. The argument commenced upon a case reported by M. Guérin, in which, led by certain theoretical as well as practical considerations, he was induced to a peculiar mode of treatment; and both his theory and his practice have received sharp criticism from some of the older members of the profession. According to M. Guérin, after the labour the uterus usually recedes or retracts into the upper part of the pelvis; its orifice closes; and, as a consequence, the wound formed by the detachment of the placenta is placed in the condition of a subcutaneous wound, and undergoes immediate cicatrization. Under certain circumstances, however, the uterus does not recede; its orifice remains more or less patent; and then, the air having access to the wound, it follows the same course as usually occurs with exposed injuries, the surface inflaming and suppurating, whilst the constitutional effects are rendered unusually noxious, owing to the internal, confined, and irregular surface of the organ.

So far, perhaps, most practitioners would be disposed to agree with M. Guérin; but he now explains the supervention of peritonitis on a new and curious theory. He believes that the sanious and purulent fluids, rapidly undergoing putrefaction, are sucked up by the Fallopian tubes, through the operation of an aspirant force exerted by the abdominal parietes acting at each movement of inspiration on the contents of the uterine cavity. He states that he has unmistakably established the presence of such fluids in the tubes, and he then proceeds to say how easily the lesions occasioned by their presence may propagate themselves by continuity of surface.

Acting on this theory, M. Guérin conceived the idea of applying an instrument which should induce a retrograde or downward movement of the uterine fluids. This consists essentially of a canula of vulcanized india-rubber, which is introduced into the vagina, the passage of which is completely closed by the action of certain ampullæ that can be inflated with air; and with the canula a suction apparatus is connected. M. Guérin had only one case to report upon, but the effects produced were so immediate and beneficial that he thought it worthy of being brought under the notice of the Academy. In this case sharp inflammation succeeded labour, with stoppage of the lochia and great abdominal distension. The application of the instrument was followed by the removal of much purulent and sanious fluids, shreds of lymph, &c., and large quantities of air, and all symptoms of peritonitis quickly subsided.

In commenting upon this case, M. Depaul expressed some doubts as to whether it was a case of peritonitis at all, and not rather one of metritis; and regarded the suction action of the uterus, as well as the passage of fluids from the uterus to the peritoneal cavity, as anatomically and physiologically impossible, since no fluids could be made to pass in this direction even with the aid of a strong syringe. He further demanded why, after craniotomy, or other operation involving the death of the child, had been performed, and in consequence of putrefaction the uterus had become tensely filled with gas, this did not escape into the peritoneal cavity, though, as is known, rupture of the uterus might even occur from this cause. M. Blot urged that if the uterus were so flaccid after delivery as not to reascend in the pelvis, it must be obvious that it could exert no aspirant power. M. Poiseuille, again, whose researches on physics of the circulation are so well known, expressed himself decisively against the possibility of any suction power being exerted in the mode and direction indicated by M. Guérin.

It appears to us that the act of inspiration, so far from leading to an ascent of the fluids contained in the uterus and Fallopian tubes, would have an opposite effect, since it is produced by the descent of the diaphragm, which must occasion increased pressure on the abdominal organs, as is indicated by the protrusion of the abdominal walls. Again, some influence must surely be attributed to the ciliated epithelium lining the Fallopian tubes, the action of which is well known to be downwards. The reasoning of M. Guérin, therefore, in respect to the mode of origin of this disease, though ingenious, is not quite satisfactory; and whilst the treatment he has suggested deserves further trial, its success can scarcely be explained on the theory he has proposed.

ECHINOCOCCI IN ICELAND.

In the last number of the *Archives Générales de Médecine* is contained the translation of a paper by Dr. Jón Finsen, "On the Echinococci of Iceland." The extraordinary frequency of the occurrence of these parasites in Iceland has long been known. Dr. Schleissner estimated that actually one-seventh of the whole population was thus affected, though his observations, founded on his own and Dr. Thorstensten's experience, were certainly not numerous enough to warrant such a statement. Dr. Leared, again, who has visited the island on several occasions, and whose estimates are supported on the evidence of Dr. Hjaltelin, considers that out of every five fatal cases one was the result of this disease. Dr. Finsen states that from the year 1867 he has taken accurate notes of all the cases which have fallen under his notice. The district under his care was the southern portion of the North Bailliage, and the population was about 10,000. He found the proportion of cases of echinococcus to that of other forms of disease only as 1 to 33·5, and this probably must be considerably diminished if all the inhabitants of the island be included. From inquiries made of intelligent farmers, combined with his own statistics, he is of opinion that 1 to 43 may be taken as the approximative proportion of those affected to the whole population. He finds that in more than 92 per cent. of the cases the malady commenced in the abdominal organs, the liver being the *point de départ* of 64·9 of these, whilst it was primarily developed in the lungs in only 2·7 per cent., and in the external tissues of the body, as the axillary region, head, &c., in 5·09 per cent. The rare occurrence of the disease in the lungs in man is remarkable, as it is very frequent either as a primary or secondary affection in these organs in sheep and horned cattle. As a rule, only one hydatid tumor develops in man, but this often attains a large size, again strongly contrasting with the smaller tumors that form in cattle. In one instance the volume of the tumor was equivalent to eighteen litres, or about four gallons. It is generally stated that large cysts contain secondary vescicles; but this is not in accordance with Dr. Finsen's experience, as he found secondary vescicles only nine times in forty-eight cases.

As regards the symptoms of hytatids when they occur in the abdomen, it is acknowledged on all hands that they are extremely slight; the first being pain, of a more or less stinging or pungent character, often experienced beneath the clavicles and scapulæ; subsequently dyspepsia, with nausea and vomiting, occur—symptoms that are probably attributed to pressure. Jaundice he found was very rarely present, occurring only seven times in 166 cases.

As respects the etiology, there can be no question that it proceeds from the tænia echinococcus of the dog; these animals being numerous and very domesticated in Iceland, and all the stages of their development having been repeatedly followed. He found that women are more frequently affected than men, in the proportion of 2·4 to 1, which he attributes to being more confined in the house, cleaning up the dishes, &c., which are often licked by the dogs. The age of from twenty to thirty is that at which the greatest proclivity to the disease exists. He denies the statement that the urine or excrements of dogs are ever employed, as has been stated in various works, as remedial means by empirics; but he thinks that the contusions to which the natives attribute the occurrence of hydatids may oftentimes really cause the development of a previously latent germ. The transformation into a calcareous or osseous tumor is rare; but rupture, which is the usual termination, often leads to a cure, the tumor bursting either through the abdominal walls, through the back, into the peritoneal cavity, into the intestine, into a bronchial tube, or elsewhere. When the tumor bursts into the peritoneal cavity, relapses will occasionally occur.

After the rupture of an hydatid tumor through the abdominal parietes, he has remarked the appearance of an exanthematous eruption on different parts of the body resembling urticaria; and considers that the presence of this in a case where an abdominal tumor has suddenly disappeared may be regarded as pathognomonic of its having opened into the abdominal cavity. This accident does not seem to be so fatal in Iceland as elsewhere; for, whilst Frerichs cites as a rarity the survival of a patient for fifteen days, four out of six cases seen by Dr. Finsen recovered.

Coincidently with the above, a paper has appeared in the first number of Brown-Séquard's *Archives of Physiology* for the present year, by M. Carrière, who gives a good description of alveolar or multilocular hydatid tumor, showing that this disease, formerly enumerated amongst the gelatinous cancers on account of its colloid aspect, is really produced by echinococci, as had already been established by Virchow, by whom the characteristic booklets had been discovered. Its most common seat is the liver; its usual size, though varying much, that of an apple. It is well defined at the periphery. Its cut surface is smooth, and presents the appearance of a matrix through which small transparent masses are distributed, with scattered spaces or alveoli filled with a viscid puriform liquid. It appears to commence in one of the biliary or vascular canals when it attacks the liver, but its mode of origin in the lungs and peritoneum is unknown. In the former case it induces either jaundice or dropsy, or both. Treatment has not been found, in any instance, to influence the course of the affection.

Medical Annotations.

"Ne quid nimis."

NEW EXPERIMENTS ON THE PRODUCTION OF TUBERCLE.

In the last number of Virchow's *Archiv*, which has just come to hand, is contained an account of an extended series of experiments by Cohnheim and Fränkel, relating to the inoculation of tubercle, which in every respect confirm the results arrived at by Dr. W. Fox and Dr. Burdon-Sanderson a year ago. Having first satisfied themselves as to the entire identity of the lesions with miliary tuberculosis in man, both as regards the naked-eye characters and the microscopical structure, they directed their attention to the question whether or not they are due to a specific virus. With this view they introduced into the peritoneal cavities of guinea-pigs minute portions of various morbid growths, as well as of healthy tissues obtained from the post-mortem theatre. The results agreed entirely with those described by Dr. Fox in his lecture last May. Not satisfied with these results, they introduced into the same cavity portions of india-rubber, of charpie, or of paper. The results in all cases were the same. A caseous abscess, enclosed in a vascularised capsule, was always formed at the seat of insertion, while the peritoneum, lungs, liver, and other organs were the seat of unequivocal miliary tuberculosis. From these facts the author drew the same inference as that arrived at by Dr. Burdon-Sanderson in his communication to the Pathological Society last April—namely, that the infective material, whatever may be its chemical or physical properties, is contained in the caseous pus which in the guinea-pig is always to be found in greater or lesser quantity in the neighborhood of inoculation wounds. For the purpose of testing the truth of this surmise, the authors varied their mode of experimentation. In several guinea-pigs a liquid consisting of caseous pus, diluted with a solution of one part of common salt in two hundred parts of water, was injected into the jugular vein. All became tuberculous. Fresh whipped blood was then injected into other animals in the same way, and finally, in another the operation preliminary to injection was performed without injecting anything. The results were the same throughout. All had abscesses at the seat of injury, and all eventually died of miliary tuberculosis. The authors went a step further. Knowing that whereas in the guinea-pig any external wound, however inconsiderable, is apt to produce suppuration, and slight injuries very rarely produce this effect in the dog, they repeated the same experiments on this animal. The result confirmed their anticipation. The injection of caseous pus always produced general miliary tuberculosis. It was not necessary to repeat the negative experiment, for the every-day experience of the physiologist teaches that in dogs the mere operation of injection by the veins is never attended with any consequences.

The terms in which Drs. Cohnheim and Fränkel formulise their conclusion, "that tuberculosis is due to the entrance of dead and inspissated pus into the circulation," are not the same as those employed by Dr. Sanderson, who attributed it to the "caseous softening" of the primary local induration, and considered that, in inoculation under the skin, subcutaneous suppuration was the essential condition of infection; but we do not see that there is any essential difference between the two explanations. It is proper to add that the Berlin experiments were begun in 1867, and were carried out in entire ignorance of those made in London. Indeed, the authors do not appear even yet to have seen more than a mere abstract of them. The only reference to them which their paper contains is the following:—"Experiments have been very recently published by two English authors, Sanderson and Fox, the results of which harmonise very well with ours." Truly it appears as if in Germany pathologists are scarcely more conversant with our literature than we are with theirs.

HAIR RESTORERS.

Considering the number of advertisements of preparations for the hair with which almost every paper we take up teems, promising speedy and infallible remedies for every defect or deficiency, it is not a little remarkable and contradictory that one should still behold amongst one's friends and neighbors so many gray and bald heads. As far as we can judge, the number is not less now than it was when we ourselves were young, and before our parting became wide or our hair tinged with silver gray. Is the hair gray?—forthwith one tribe of advertisers promises to restore it to its original color in almost less than no time. Has the scalp become denuded for years of its chief ornament?—another set offers to clothe it afresh with rich and luxuriant tresses. Is the hair lank and straight and lustreless?—a third class of hair restorers advertises a variety of nostrums for rendering it curly, glossy, "beautiful forever."

The fact that the majority of hair dyes and washes are made up of constituents which not only injure the hair, but are capable, if absorbed, of seriously affecting the health, is pretty widely known; and denunciations of these hair preparations have from time to time appeared in the public press. These denunciations, however, have been for the most part too vague and general to effect much real good. The advertisements go on much as they did before, and the public still continue to be purchasers. In the case of the adulteration of articles of food and drink we found that merely general statements produced little result, but that when the vendor or manufacturer was made personally responsible the deterring effects were rapid and marvellous; and the same remark is equally applicable to the present subject.

One of the best known and most extensively advertised preparations for the hair is Mrs. S. A. Allen's World's Hair Restorer. On the label it is affirmed that it is the "best" of all hair restorers; and the reasons given for its being the best are—"Because it contains no nitrate of silver, nor any other injurious ingredient. Because it does not dye the hair, but acts directly on the roots, giving them natural nourishment. It contains the specific aliment which is the life of the hair, and in this way the natural color is restored."

We will now put these statements to the test by reference to the actual composition of the article. We find, then, that it is composed of acetate of lead, sulphur, and glycerine. Now lead, while it is one of the most frequent constituents of hair dyes, is also one of the most if not the most injurious. It will thus be seen how utterly worthless are the statements above quoted, and that the assertion as to the preparation containing "the specific aliment which is the life of the hair" is a mere fiction.

The detection of lead in a hair dye or wash is very simple, and may be readily effected by adding a few drops of a solution of iodide of potassium to a small quantity of the dye, when, if a soluble salt of the metal be present, it will be revealed by the curdy yellow precipitate immediately produced.

WHAT TO DO IN CASES OF SUDDEN ILLNESS.

A correspondent wishes us to give some directions for the guidance of the public in cases of sudden attacks of illness. It is not easy in a short space to lay down instructions of this kind. But the following principles may, in most cases, be safely acted on. If the case occurs in a crowded church or other place, and especially if the patient be a lady, it may be considered a mere fainting; and the best way of relieving that is, to lay the patient down if possible, use a fan and the smelling-bottle, and as soon as the patient has recovered a little remove her into the open air. The case of a man found insensible is altogether of a graver complexion. Even here the generally safe thing is, to lay him down on his side, keeping the head a little raised; to loosen anything about the neck; allow air to play about the patient; and send for the nearest doctor. If the patient is quiet and pale, and can swallow, a little wine and water, or spirit and water, may be given, pending the doctor's arrival. If he is in violent convulsion, with foaming at the mouth, the great duty of bystanders is to control the movements of the patient so that he do not injure himself; to loosen the neckerchief; allow plenty of air to circulate, and await the arrival of a doctor. The patient cannot swallow in this condition, and the fit will in all probability pass off in a few minutes.

THE PATHOLOGY AND TREATMENT OF UTERINE FLEXIONS.

We have received numbers of the *California Medical Gazette* for October and November, 1868; and find in them, among much interesting matter, two papers under the above title, by Dr. John Scott, of San Francisco, Surgeon to the California State Women's Hospital. The recent discussions in this country impart additional interest to these papers, and the views and practice of Dr. Scott seem to us to be sufficiently original and important to deserve the attention of our readers. We therefore give a summary of what he has written on the subject.

Dr. Scott is of opinion that some malposition of the uterus exists in nearly all chronic uterine affections, especially in cases of erosion of the os, with hypertrophy of the cervix; and he attributes the discomfort and impaired health of the patient, which often continue after all *visible* disease is removed, to the effects of the displacement. He points out that the speculum and the position used by Dr. Marion Sims are the only ones that render it possible to determine exactly what is the shape and direction of the uterus; and leads up finally to the conclusion that "the *true pathology* of uterine displacements will be found in the existence of *chronic inflammation of the organ, and the results it entails*; and, if this opinion is correct, the treatment based on it will embrace at one and the same time the removal of the malposition which exists and the affection which has produced it.......In this way we can perceive how the effusion of fibrin in either wall of the uterus will lead to an ante- or a retroversion, while a more uniform enlargement of the organ will tend to its prolapse."

After discussing at some length the differences of opinion, about the importance of flexions, that prevail, it seems, in the New World as well as in the Old, Dr. Scott expresses his own opinion as follows:—

"In *recent* cases, and before the uterus has become fixed in its position, it is quite possible, by rest, local depletion, and saline aperients, with tonics, to effect a restoration of the uterus to its natural position; but when the affection has become chronic, and effusion of fibrin into the parenchyma of the organ has taken place, the malposition remains and perpetuates itself till measures of a more radical and comprehensive nature are adopted for its removal.

"If a uterine version is not a *dislocation* of the organ—whether produced gradually or suddenly, —I know not what it is; and to leave it in a position where, by its pressure on adjacent organs, it interferes with their proper functions, while its own circulation and nutrition are at the same time injuriously affected, is to sanction a practice which can scarcely be called either scientific or rational."

The author next proceeds to the consideration of treatment; and, after giving an opinion very decidedly adverse to pessaries, describes his own methods of proceeding in language which we will quote at length.

"In entering on the treatment of retroflexion, the first and most important point to determine—a point which I have not seen insisted on—is, the existence or non-existence of adhesions; for in one case, where the uterus is free, we can confidently hold out the hope of a perfect restoration of the organ to its normal position and integrity, as the result of the treatment; whereas, in the other, our prognosis must be guarded, and while we anticipate such a marked and permanent improvement in the general health, and such a relief from local suffering, that the patient will cease to suffer from the affection, yet we may entirely fail to rectify the malposition itself. Taking, therefore, a case of simple retroflexion, we shall find the uterus bent on itself, generally enlarged, more or less tender on pressure, capable of being lifted up into its natural position by the cautious use of the sound in its cavity, but gradually falling back into its position on its withdrawal. The cervical canal is in the form of a bent tube or syphon, and at the point of flexure behind, an inch and a half from the os, the induration previously noticed will be found.

"The treatment must be both general and local. While the functions of all the abdominal viscera are seriously interfered with, the portal circulation is especially deranged, as evidenced by the frequent occurrence of rectal disease in the form of hæmorrhoids, prolapsus ani, fissures and ulcerations; and, as a consequence, the secretions of the liver are not only seriously disordered, but that viscus is constantly the seat of a passive congestion, which exerts an important influence on the health and spirits of the patient. To remedy this state of things, mercurial alteratives, and aperients, such as castor oil, or compound jalap powder, should be given at intervals during the first month; afterwards, small doses of bichloride of mercury, with vegetable tonics, such as calumba or cascarilla, with muriate of ammonia, will be found all that is needed till convalescence has advanced, when the preparations of iron and quinine will be found of the utmost value. To assist nature in restoring the uterus to its normal position, the following operation is then performed, and the proper time for its execution is the first week after the cessation of the catamenia, the patient's bowels having been freely acted on the day before. The patient lying on the left side, with the knees drawn up, and the left arm behind the back, Sims's speculum is introduced and firmly held by the nurse. The anterior lip of the os is then seized by Sims's tenaculum, and with the long elbow scissors described by Emmet, it is divided to the extent of about half an inch. The ordinary uterine sound is then introduced, and the organ having been with its aid restored to its natural position, it is withdrawn, and replaced by the small silver probe, which is handed to an assistant, who is directed to retain it *in situ*, with its concavity forward. And if the patient is directed to lie with the body inclined forward, the organ will readily gravitate in that direction. Sims's knife (as improved by Emmet), with the blade in a line with the shaft, is then introduced, with the edge backwards, through the os and *above the flexure*, and this latter is divided by an incision which extends along the back wall of the cervix clean out to the os externum. The knife is again passed in with the edge reversed, and another incision is made along the front wall, beginning opposite the commencement of the first incision, and terminating in the division of the anterior lip made previously by the scissors. In the absence of woodcuts, too expensive for a young journal to furnish, I feel it difficult to convey a correct idea of the depth to which these incisions are carried, but I hope it will suffice to say that they must be regulated by the amount of adventitious deposit and hypertrophy which exist, and which vary in almost every case. They must be sufficiently free to accomplish the object in view, while such a division of the uterine tissues as would interfere with the future integrity of the organ must be carefully avoided. But little bleeding may be expected; but what does occur should be encouraged to the extent of four or six ounces, as a salutary depletion from the engorged tissues. Future hæmorrhage may, however, occur; and to provide against it, and *prevent the premature closure of the incision*, small pledgets of cotton, dipped in a solution of perchloride of iron and glycerine, in the proportion of one of the former to two of the latter, should be introduced in succession within the cut surfaces till all bleeding has ceased. The cotton must first be wetted and squeezed out before dipping it in the solution, and while the os is held by the tenaculum they should be pushed up by means of the long small pointed uterine dressing forceps, and finally a large pledget dipped in the solution left in contact with the os, to which it will readily adhere. Further tamponing of the vagina is unnecessary, and only adds to the discomfort of the patient. The after-treatment is most important. The patient should be put to bed for at least ten days, and the recumbent posture rigidly enjoined for the first six or eight weeks, to provide against the gravitation of the organ backward, which sitting up or walking about would naturally produce. On the third day after the operation, the external pledget may be withdrawn, and the vagina washed out by a gentle stream of tepid water. The internal pledgets must be allowed to come out of themselves, as the result of suppuration, and this will be effected in about three days more. The probe must then be passed through the line of incision, to break up any granulation or attempt at adhesion, and this must be continued at first every day, and afterwards every second day, till the occurrence of the next menstrual period. At each visit we should, after passing the sound through the incisions, elevate the uterus to its natural position, and having anteverted it as much as possible, the posterior cul de sac of the vagina should be tamponed with cotton soaked in glycerine, as an admirable support to the weakened organ. The pledgets should have a string attached for their withdrawal before bedtime, for a longer continuance than from six to eight hours will generate heat and discomfort in the vagina, and tend to produce an irritation of the parts. This local tamponing must be continued daily till the uterus has returned to its right position, and manifests the power to retain it; and I need scarcely add how important it is that during this time no local accumulations in the rectum should be allowed to impede its ascent.

"Under this treatment it is most gratifying to notice the uterus ascending from day to day to its natural position, so that on examining our patient after the cessation of the next menstrual period, we may find the retroflexion gone, and the organ, in some cases, actually slightly anteverted; but in severe cases a degree of retroversion of the fundus will still exist, which will, however, disappear, under the influence of the after-treatment. The uterus is, however, still larger and heavier than natural, and consequently occupies a lower position in the pelvis than it should do, and our efforts must now be directed to the removal of that state of chronic disease of the lining membrane of the cavity with which it is invariably associated, while we at the same time stimulate the absorbents to remove redundant tissue.

"The precise nature of this affection I will not further discuss, than by stating that I believe it consists in hypertrophy of the mucous membrane, with enlargement of its follicles, accompanied by a tenacious, ropy secretion, considered as characteristic of chronic endo-metritis, of a very intractable nature, and for the removal of which I entirely rely on the judicious use of sponge tents, followed by injections. I have for some time entirely discarded the use of solid caustics of any kind, in the interior of the uterus, as uncertain in their action, painful in their application, and unsatisfactory in their results; and I believe fluid medications will eventually take their place, if but properly used, and their *modus operandi* correctly understood.

"A day or two after the cessation of the catamenia, a sponge tent, *just large enough to enter the canal easily*, should be inserted, and after a lapse of six or eight hours replaced by a larger, which can be worn till the following day. The patient then lying in the semi-prone position, with the speculum introduced, the tent is gradually withdrawn by means of the sponge-tent forceps, and the instant it is found emerging from the os a sponge probang is pushed up to the latter to prevent the sudden ingress of air into the cavity which would otherwise take place. The cavity is then washed out by tepid water gently injected several times; and all discharges having been removed by sponging, about a drachm of the compound tincture of iodine, or a combination of carbolic acid, glycerine, and tincture of iodine, or a solution of permanganate of potash, in the proportion of thirty or forty grains to the ounce, is injected into the cavity of the uterus.

"After a lengthened trial of various medicines, I find that the following combination is the most suitable, as being entirely free from risk, permanent in its results, and not productive of the pain which other injections are liable to produce. The solution consists of carbolic acid one part, glycerine three parts, tincture of iodine four parts; and its application to these cases is universal.

"The instrument I use for injection consists of a hard rubber tube, bent like the uterine sound, and attached to a hypodermic syringe which holds one drachm; and having passed it well up to the fundus, I throw in the fluid, guttatim, to prevent any of it passing into the Fallopian tubes, though I consider such an occurrence as most improbable with the most ordinary care. No precautions are necessary for guarding the vagina beyond the passing a sponge probang close to the os, to absorb the fluid as the uterus presses it out, for it does not injure the vagina, and causes no pain.

"If the canal of the cervix has been thoroughly dilated up to the fundus, the patient suffers so little from the injection that she is scarcely aware of the proceeding; but should any local pain result, the application of a very hot flannel to the hypogastrium will speedily remove it. In the preparation of the sponge tents I add carbolic acid to the gum, in the proportion of three drops to the ounce, which has the effect of medicating them, and to a great extent prevents the fetor which renders them so objectionable. The patient should remain in bed for some days after the injection, and eight days afterwards it may be repeated; or a flat curved probe, covered with cotton, and dipped in the solution, may be passed into the cavity. But *no application* should be made within less than eight to ten days before the next menstrual period. The repetition of this application after the two or three following periods will usually complete the patient's recovery.

"Injections into the uterus have been regarded as dangerous, and at best but transitory in their effects, and, therefore, inefficient in the treatment of uterine diseases. I am convinced that this opinion is most erroneous, and has arisen from the manner in which they have been used, and an ignorance of their effects. *All* injections into the uterus, even of the mildest character, are not only excessively painful, but positively dangerous, if the canal of the cervix has not been previously *well dilated;* and, if used without this precaution, will readily produce metro-peritonitis or pelvic cellulitis, with, perhaps, abscesses and infinite suffering. The canal of the cervix well dilated, injections of iodine, permanganate of potash, or the combination above alluded to, can be used without any risk, and with scarcely any pain; while their effects in modifying the whole vitality of the organ are superior to that of any substance in the solid form, safer, and more reliable."

The paper concludes with a recital of two cases of chronic uterine disease, one of nine and the other of eight years' duration, both cured within five months, and restored to "perfect health and strength." Our space does not allow us to quote these cases; and it is the less necessary to do so, since the treatment is described in less detail than in the passages given above.

News Items, Medical Facts, &c.

Sulphur in the Treatment of Croup.—The use of the perchloride of iron and of the bromide of potassium has been much advocated of late in the treatment of croup and diphtheritic angina. The flour of sulphur, which had already been pointed out by different writers as an excellent remedy in similar cases, is now spoken of in most laudatory terms by a French writer, Dr. Feyreigne, of Toulouse, in whose hands it produced most wonderful effects. Dr. Feyreigne only records one case, but it was a peculiarly bad one. The patient, a little girl of four years, was in a dying condition, with intense diphtheritic angina, when the administration of the flour of sulphur brought her back to life. The dose employed was five grammes of sublimated sulphur to one glass of water; a teaspoonful of the mixture to be given every hour.

West Coast of Africa.—By late advices from France it is to be observed that the cholera has arrived at St. Louis, the capital of the French possessions in the Senegal, the inhabitants dying at the rate of 100 a day. This is the first occasion on record of the fatal visitant having reached the West Coast. Its advent is much to be dreaded among a people so under-fed as the natives. The yellow fever has always marched from south to north along the coast-line; whereas the reverse route has been followed by the cholera, it being rife during last summer in Morocco. It is to be hoped that the authorities at the Gambia, Sierra Leone, Lagos, and the Gold Coast settlements will promptly establish Boards of Health, with full power to act summarily in removing impurities from the towns, and that our garrisons may be well supplied with medical men. —*The Times.*

Danger of giving Strong Doses of Camphor.—A case illustrating the above has recently been brought under the notice of the Société de Médecine et de Pharmacie de Grenoble. An enema consisting of five grammes of camphor dissolved in the yelk of an egg was given to a child three years of age suffering from typhoid fever. Symptoms of poisoning soon manifested themselves: convulsions, lividity of the countenance, stupor, arrest of the urinary secretion, &c. The employment of coffee sufficed to restore the child.

PUBLISHED BY
WM. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 5. NEW YORK, MAY, 1869.

Lectures

ON THE

PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM;

AND ON THE

TREATMENT OF ORGANIC NERVOUS AFFECTIONS.

By C. E. Brown-Sequard, M.D., F.R.S.,

Fellow of the Royal College of Physicians of London;
Member of the National Academy of Sciences (U. S.),
Etc.

LECTURE II.—Part II.

ON ORGANIC AFFECTIONS AND INJURIES OF THE SPINAL CORD, PRODUCING SOME OF THE SYMPTOMS OF SPINAL HEMIPLEGIA.

Facts proving that a lesion in one of the lateral halves of the cervical region of the spinal cord produces: paralysis of bloodvessels in the limbs and trunk on the same side; a morbidly increased sensibility (hyperæsthesia) in the same side; several vaso-motor and other symptoms in the eye and face on the same side.—Conclusions from the above demonstration.

After the facts I have just related (see Part I. of this lecture), I think no one can doubt that when a lesion in a lateral half of the cervical region of the spinal cord is extensive enough to cause a paralysis of voluntary movement and of the muscular sense, it is in the limbs and trunk on the same side that these symptoms will appear. No one also can doubt that if a lesion in the cervical region of the spinal marrow is extensive enough to produce anæsthesia, this symptom will show itself, not in the limbs and trunk on the paralyzed side, but in those parts on the opposite side.

Continuing my demonstration, I will now show that symptoms of paralysis of bloodvessels will appear in the eye, the face, and the limbs and trunk on the side of a lesion in the cervical region of the spinal marrow.

4th. *A lesion in one side of the spinal cord produces vaso-motor paralysis in the trunk and limbs on the same side.*—Since the time I discovered * that a transverse section of a lateral half of the spinal marrow, in animals, is followed by a paralysis of the vaso-motor nerves on the same side, this fact has been observed by many other experimenters. Moritz Schiff, however, has tried† to prove that such a lesion does not paralyze all the bloodvessels on the same side (in parts behind the section). He believes that some vaso-motor nerves decussate in the spinal cord. I will not examine now whether he is right or not on this point. All I wish to say at present is, that all physiologists agree in admitting that a section of a lateral half of the spinal cord is followed by a decided increase of temperature, in some parts at least, behind the section on the same side, and that this augmentation of heat is due to a paralysis of bloodvessels.

When such an operation is made in the cervical region, both limbs and the trunk, on the same side, have a paralysis of their bloodvessels, which is shown by an increased temperature. It may occur, however (in this case, and also when the cord is cut lower down), as I have already shown in a paper on the physiology and pathology of the spinal marrow, that if an inflammation supervenes in the divided half of that organ, the bloodvessels, which are muscular tubes, are seized with a spasmodic contraction similar to that which we so often observe in muscles of voluntary motion. As a consequence of this vascular contraction in the paralyzed limbs, there is, in them, a notable diminution of temperature. This effect is seen but rarely in animals, as myelitis is very rare in them. In man, on the contrary, some degree of inflammation of the cord, after a traumatic lesion, is frequent, and we often observe, as a consequence, a spasm of bloodvessels, with a

---

* See the *Medical Examiner*, Philadelphia, January, 1853, p. 137; and my work. "Experimental Researches applied to Physiology and Pathology," New York, 1853, p. 73.

† Untersuchungen zur Physiol. des Nervensystems Frank-furt-a-M., 1855, p. 192, *et seq*.

diminution of temperature. This spasm, however, is only temporary, and is followed by a more or less marked dilatation, with increased heat.

So far as I know there is only one case on record, in man, in which an autopsy has shown that a lesion in a lateral half of the cervical region of the spinal cord produces a paralysis of bloodvessels in some parts of the body, on the same side. This case, which I will report briefly, has been published by an able military physician, Dr. L. Collin.[*]

Case 16. *Incomplete paralysis of the right limbs, with considerable increase of temperature of the right hand; sudden death from disease of the heart; clot of blood in the right anterior column of the spinal cord, at the level of the third cervical vertebra.*—A man, after a fall on the head in April, 1861, was attacked with osteitis of the second and third cervical vertebræ, and paralysis of movement of the right upper limb, with weakness of the lower one, on the same side. Two months after the accident he was seized with rheumatism, and had an affection of the heart. He was admitted at the Val-de-Grâce in September, 1861. A very great difference of temperature between the two hands at once attracted attention. Three thermometric observations gave the following results:—1st. On the 20th of September, the temperature of the armpit being 38° cent., the right hand was at 37°, and the left at 32°. 2d. On the 22d of October, the armpit giving 37° cent., the right hand gave 36°, and the left 24°. 3d. On the 12th of November, the armpit being at 37° cent, the right hand was at 35°, and the left at 24°. These experiments represent nearly the average of all those that were made. The last two being made in cooler weather, gave a greater difference than the first one, a difference of about 11° or 12° cent. (19·8° to 21·6° Fahr.) No marked difference of temperature was observed between the two lower extremities. On the 16th of November, the patient fell suddenly insensible, and, without a cry or convulsion, died in a few seconds.

The post-mortem examination showed that the brain, the cerebellum, and the pons Varolii and their envelopes were in a perfect condition. The body of the third cervical vertebra protruded a little in the spinal canal. After having removed its periosteum, the osseous tissue was found swollen and of a blackish color. There was nothing remarkable in the outside appearance of the spinal cord; but after a longitudinal division of the right anterior column, a clot of blood was found at the level of the third cervical vertebra. This clot was soft, not discolored, nor encysted, and surrounded by softened tissue, all these altered parts being of the size of a hazel-nut. There was no alteration in the cervical part of the sympathetic nerve. There was a considerable eccentric hypertrophy of the heart, with cellulo-fibrous adherences to the pericardium; there was also insufficiency of the left sigmoid valves.

This case leaves no doubt that, in man as in animals, when a lesion in a lateral half of the spinal cord is followed by a vaso-motor paralysis and a rise of temperature, these effects appear on the side of the lesion. The only difference is that in the experiments heretofore made by physiologists an elevation of temperature has been observed in both extremities, on the side of a section of a lateral half of the spinal marrow in the cervical region; while in the patient whose history I have just given, the upper extremity alone had an increased temperature. But experiments which I made quite recently show that there is no difference on that score between man and animals. I have found that the vaso-motor nerves of the limbs behave like the voluntary motor nerve-fibres in the cervical region of the spinal cord: these two sets of conductors belonging to the upper extremity occupy a more superficial part of the spinal cord than the sets belonging to the lower extremity, so that a lesion which does not alter the whole of a transversal zone of a lateral half of that nervous centre may, according to its location in that half, produce a paralysis of voluntary movement and of bloodvessels, either in the upper or in the lower limb alone on the same side. I will, by-and-by, give more details on these experiments.

Dr. Collin attributes to the great impulse given to the blood by the hypertrophied heart of his patient the very great difference of temperature between the side where the bloodvessels were paralyzed and the other side. It is probable that this cause had some influence; but even without the existence of such a cause, it is probable that, in man, a lesion, entirely limited to one half of the spinal cord,[*] and placed high up in the cervical region, would produce a considerable difference of temperature between the two sides of the body. In dogs, Moritz Schiff has seen a difference of 12° cent. (21·6° Fahr.) I once observed with one of my pupils, Dr. Carmona, a difference of 20° cent. (36° Fahr.) In those cases, however, there was more than the effect of a paralysis of bloodvessels on one side; there was also, as I have already stated in a communication made long ago to the Royal Society,[†] a spasmodic contraction of these muscular tubes on the opposite side, owing to the irritation of the lateral half of the spinal cord, which had been left undivided.

To conclude, as regards the influence of a lesion in a lateral half of the spinal marrow on bloodvessels, I will say that the results of experiments on animals, and what was observed on Dr. Collin's patient, positively prove that such a lesion, when followed by a vaso-motor paralysis and an elevation of temperature, produces these effects in the same side where it exists. We obtain, therefore, in the fact of that relation of side between those symptoms and a lesion of that nervous centre, an additional proof that in the cases I have related in my first lecture, and in which there was an elevation of temperature in the paralyzed limbs (Cases 1, 2, 3, 5, and 10), I was right in considering the symptoms observed as caused by a lesion chiefly located in a lateral half of the spinal marrow.

5th. *A lesion in one side of the spinal cord produces a morbidly increased sensibility* (*hyper-*

---

[*] *L'Union Médicale*, No. 37, p. 580, March 29th, 1862.

[*] In all the cases of lesion of the upper part of the spinal cord, which I have reported in my first lecture, the alteration was not absolutely confined to one of the lateral halves of that organ.

[†] See "Proceedings of the Royal Society," 1857, vol. viii., p. 504. In this paper I tried to show that there is a great analogy, if not an absolute identity, between some of the effects of a section of a lateral half of the spinal cord and those of the division of the cervical sympathetic nerve.

æsthesia) in the trunk and limbs on the same side.—The demonstration of this proposition is most positively obtained by experiments on living animals. Since I first discovered, twenty years ago, that a section of a lateral half of the spinal marrow is always followed by hyperæsthesia in the paralyzed parts, I have had the opportunity of performing this experiment on an immense number of animals belonging to more than thirty different species, and I have never missed observing, immediately after the operation, a decided increase of sensibility to painful impressions.

I do not intend to examine here what are the causes of this hyperæsthesia; I will only say that the principal one is a paralysis of the vaso-motor nerves—first, of the spinal cord on the side injured and behind the section; second, of the limbs and other parts of the body, also behind and on the side of the lesion.

I do not know of a single case, in our species, in which an autopsy has shown the exact seat of the lesion in the spinal cord, when this seat was in a lateral half of the cervical region, in patients who have had a decided hyperæsthesia in paralyzed limbs; but there are two or three cases of hemi-paraplegia, which I will relate in the next lecture, in which a post-mortem examination has shown that the lesion in the spinal nervous centre was on the side of the hyperæsthesia. We may conclude, therefore, that the existence of unilateral hyperæsthesia in the paralyzed side, in cases of organic affections of, or of injury to, the spinal cord, may show, as well as the paralysis, what side of that nervous centre is altered. I was right, therefore, in pointing out as the seat of the lesion in the spinal marrow the lateral half of that organ corresponding to the side of a decided hyperæsthesia in the trunk and limbs, in the cases the details of which I gave in the preceding lecture. On the other hand, in a number of the cases I have related there was no hyperæsthesia, which is easily explained by experiments on animals, showing, 1st, that in an incomplete section of a lateral half of the spinal cord, leaving in a normal state the posterior parts of that half, there is only a very slight and temporary hyperæsthesia; 2d, that when the two lateral halves of the spinal marrow are divided transversely, one of them completely, the other one incompletely, sensibility may remain — but not increased, and sometimes diminished—in the trunk and limbs, on the side of the complete transverse division.

6th. *A lesion in one side of the spinal cord produces in the eye and face, on the same side, symptoms similar to those which follow a section of the cervical sympathetic nerve.* — My experiments on animals, those of Budge and Waller, and of Moritz Schiff, leave no doubt as regards the similarity of effects on the eye and face, between a section of a lateral half of the spinal marrow in the lower part of the cervical region and a division of the cervical sympathetic nerve. As yet, however, so far as I know, no such case has been published in which a post-mortem examination has shown a lesion limited to one-half of the cervical part of the spinal cord. But there are a number of cases on record, with an autopsy, in which there was a lesion of the two halves of the spinal marrow in the cervical region, in man, having produced in both eyes and also both sides of the face, the same effects which are caused by a section of the cervical sympathetic nerve. The profession owes to Dr. J. W. Ogle an excellent paper on that subject. There is no difference, therefore, in that respect between man and animals; and I can conclude that in the cases I have related in the preceding lecture, in which there were unilateral, facial and ocular, symptoms, resembling the effects of a section of the cervical sympathetic nerve, there was a lesion in the corresponding side of the spinal cord, producing at the same time these symptoms, and a paralysis with hyperæsthesia in both limbs on the corresponding side. These interesting features, or, at least, some of them, were particularly observed in Cases 1, 2, 6, 9, and 10. Most likely they have existed in other cases, but have not been observed or have not attracted attention enough to be mentioned.

Conclusions from the above demonstration. — With the help of the knowledge acquired by the demonstration of the six propositions just discussed, it will be easy to ascertain what was the seat of the lesion in the cases I have related in the previous lecture. Indeed, each one alone of the six symptoms—the signification of which I have examined — would be sufficient (in a case otherwise known to be one of disease of, or injury to, the cervical part of the spinal marrow) to show in what half of that organ the lesion exists. If a healthy man, for instance, is wounded in the neck, and, without any indication of a simultaneous injury to the brain, is seized with paralysis of voluntary movement in the trunk and limbs on one side, it will be quite evident, from the existence of that paralysis, that the spinal cord has been wounded on that side. If in the same man, before detecting the paralysis of movement, you find that the two limbs and the trunk on one side are anæsthetic, this symptom alone will also be sufficient to show you that the seat of the lesion is in the opposite side of the cord, in the cervical region. The same diagnostic value belongs also to the loss of the muscular sense, to hyperæsthesia and to paralysis of the vaso-motor nerves in the trunk and limbs, and in the face and eye—symptoms which all point out the existence of an injury to one of the lateral halves of the cervical part of the spinal marrow, on the same side in which they exist.

Each of these six symptoms, I repeat, is perfectly sufficient for the diagnosis of the seat of the lesion in the spinal nervous centre. There is, therefore, no doubt that in many of the cases of spinal hemiplegia reported in my first lecture, the lesion was in one of the lateral halves of the cervical part of the spinal marrow; and that in the other cases it extended to some part of the other half of that organ.

I am surely entitled to add that, if it is proved, as I think every one will admit, that such was the seat of the lesion in these two series of cases, they become as valuable as if an autopsy had shown that seat, and confirmed the diagnosis. They may serve, therefore, to characterize the two varieties of the kind of paralysis which I have described in the preceding lecture under the name of spinal hemiplegia.

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.,
Lecturer on Orthopædic Surgery at the Hospital.

LECTURE VI.

ON AFFECTIONS OF THE JOINTS.

The affections of the joints of which I have specially to treat are those arising out of certain results of inflammation, rather than the condition of inflammation itself, and which terminate in anchylosis; congenital dislocations, and old unreduced dislocations.

Anchylosis is either true or false. True anchylosis, or synostosis, implies that the soft structures of the joint have been destroyed, and that bony union has taken place between the adjacent bony surfaces; and by false anchylosis is understood the formation of membranous or fibrous adhesions within or external to a joint, and which interfere with motion.

False, partial, or fibrous anchylosis is induced, then, by the deposition of lymph within or around a joint, through which adhesions are formed which interfere with motion. Motion may be only slightly impeded, or it may be, in fact, lost. If the muscles about a joint, or the tendons which pass over the joint, can be rendered prominent or tense, anchylosis is not complete; neither is it complete, or bony, should the slightest motion remain. And even though motion be lost, the same sensation of solidity is not imparted to the hand, on grasping the limb firmly above and below the articulation, as when bony anchylosis has taken place.

Fibrous or false anchylosis may be divided into two classes, which may be severally designated extra-capsular and intra-capsular.

Extra-capsular anchylosis depends on inflammatory action, such as is induced by burns, phlegmonous erysipelas, mechanical injuries, and indeed every form of inflammation through which lymph is deposited around a joint; while intra-capsular anchylosis is occasioned by various forms of inflammation which have affected the structures within the joint, and through which adhesions have been formed.

Thus, the fibrinous deposit, whether within the joint or external to the capsule, becoming organised, occasions false anchylosis.

Lymph is poured out into the cellular tissue around a joint, and about the sheaths of the tendons and muscles in the immediate vicinity; it becomes organised, and the parts are more or less matted together and fixed, whether in an extended or a flexed position, and their functions are impaired. And when the interior of the joint is affected, instead of that portion of the limb external to the capsule, then, in a somewhat similar manner, adhesions are formed between opposed surfaces, the inflammatory product becomes organised, and motion is hindered. Both in intra- and in extra-capsular inflammation the amount of injury to the limb will depend in some measure on the character of the inflammation. It will depend much more, however, on the mode in which that inflammation has been treated; whether attentively from the commencement, with absolute rest, or negligently—allowing the use of the joint. And in proportion as the inflammation is of long duration, so in all probability will the adhesions which form be dense and extensive. When, however, disease is arrested, and the interior of the joint is restored to a healthy condition, the adhesions which have formed may be so dealt with that motion may be restored. In many cases the adhesions are slender, and although slender they may entirely prevent useful motion; or, again, they may be more extensive, and yet yield and allow of increased motion. When the articular surfaces occupy their normal positions, and the interior of the joint is restored to its integrity, motion may be restored. It is a notion now forever banished, that partial anchylosis has yet to be endured, and that surgical art can offer no remedy.

In many cases of partial anchylosis there is, also, partial displacement of the articular surfaces. Some of these admit of rectification of the position of the limb; in the majority of instances, however, this amelioration can only be partially accomplished, and it cannot always be maintained even after tenotomy. It need not be said that there is no hope of restoring motion, in a permanent manner, unless the position of the limb as regards the articular surfaces is first restored.

The *treatment of partial anchylosis* may be divided into—1st, gradual extension with or without tenotomy; and 2nd, forcible flexion of the limb, with or without tenotomy, and subsequent gradual extension.

In all cases of partial anchylosis there exists some muscular rigidity; in some also, cicatrices are found, resulting from loss of substance. In cases where the adhesions are recent, contraction of a limb will probably yield to continued extension—such extension, namely, as is made by means of a well-adjusted instrument for the purpose; but, except in cases of recent adhesions, it is generally necessary to commence the treatment by dividing the tendons of rigid muscles, and by dividing, subcutaneously, cicatrices. It is better to proceed at once to these subcutaneous sections rather than to prolong the treatment by extension unnecessarily; for, except when the adhesions are recent, simple extension is seldom so efficacious as when it is combined with subcutaneous sections. Even partial displacement of the articular surfaces is easily produced by continued extension without tenotomy. Indeed, this is not unfrequently seen to result at the knee when extension is long continued with rigid muscles. And, therefore, whenever it is desired to remove the contraction of a limb by extension, it is the rule first to divide the tendons of rigid muscles, and to divide cicatrices subcutaneously, and subsequently to proceed gradually to extend the limb.

But if such be the law of treatment where the articular surfaces occupy their normal positions, it is even more to be insisted on when any displacement has taken place. Extension should then without fail be preceded by the subcutaneous section of such tendons, fasciæ, and cicatrices as might interfere with the readjustment of the articular surfaces.

These obstacles to extension then having been removed, a well-adapted instrument is to be applied to the limb, and extension is to be made slowly. The instrument should support the limb efficiently; and it should always, in the first instance, be applied to the limb at the same angle at which the limb was held before the subcutaneous sections were made. So soon then as the punctures have healed, extension may commence, and be continued without pain and without producing displacement.

Numberless cases, however, exist in which the means above-mentioned are useless to restore to the limb either the normal position of its parts or to restore motion; cases, for instance, in which the adhesions are so firm that they do not yield to gradual extension: sloughs may be caused, and dislocations, partial or complete, may be produced; but the adhesions, whether intra- or extra-capsular, remain firm and unyielding. Injury alone, but no useful result, can accrue from gradual extension in these cases. Before chloroform was introduced, these were among the *opprobria* of surgery. Then, and indeed later, gradual extension of such limbs was continued for months without any advantage being derived; and the same system has been applied even where bony union rendered any benefit impossible.

Thus it is necessary, before proceeding to the treatment of a case of this kind, to form a correct diagnosis—to determine whether complete anchylosis has taken place, or whether the adhesions are fibrous; and if fibrous, whether they will yield to gradual extension or not. If these several points cannot be otherwise determined, chloroform should be fully administered, so that when muscular relaxation has been obtained both the character of the adhesions and the amount of motion may be ascertained. When bony union has taken place, a sense of solidity and continuity of structure is communicated to the hands on grasping the limb above and below the articulation; but when fibrous union has formed, there is always more or less motion to be obtained. And if the adhesions are of such a character—so firm and unyielding, allowing of only slight motion, and with inconsiderable muscular retraction—that the normal position of the limb can only be gained by the forcible rupture of the adhesions, the force should be so applied that it is used mainly, if not entirely, in flexion of the limb.

Any tendons which are rigid should first be divided, and the punctures having healed, and chloroform having been fully administered, the limb to be operated on should be so firmly fixed that all motion is prevented, except that which the operator is about to impart to the limb. Thus, for instance, if the hip-joint is to be operated on, the pelvis must be fixed; if the knee, the thigh must be securely held; and so on. When the limbs are thus firmly secured, the adhesions are to be instantaneously ruptured, by force applied in the direction of flexion. I say that the adhesions are instantaneously ruptured, when the patient is properly prepared, and the force is rightly adjusted. The limb is then to be bandaged, and the joint is to be confined either in a gutta-percha splint or in a flexible splint.

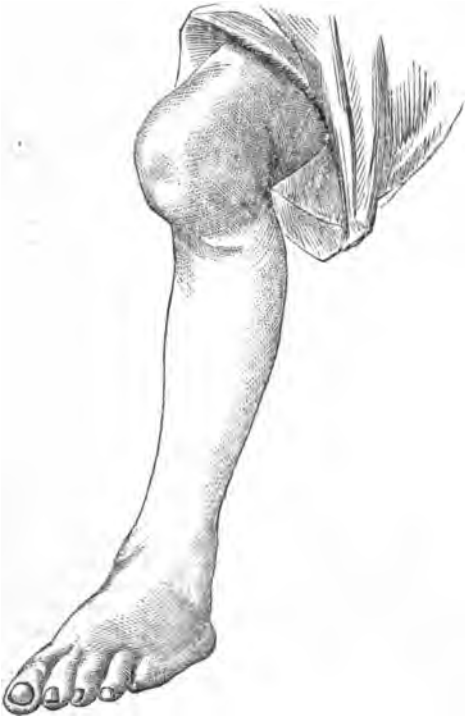
I know of no danger whatever from the use of force so applied. Indeed, when the influence of the muscles is perfectly removed, the adhesions themselves usually offer very little resistance; and if the power to be applied is sufficient for the purpose, the result is instantaneous. In a small number of instances, the hand alone is insufficient to rupture the adhesions readily; in these I make use of an instrument of great power to flex the limb. Not only is there no danger connected with this operation, but with moderate care it would seem to be impossible to set up unhealthy action. There are timid people who would persuade you that in these operations fracture is not uncommon; that inflammation is frequently excited; and they will proceed to detail a list of ills, with which I will not trouble you. Let it be sufficient for me to say that I have never seen a fracture produced, nor have I known inflammation to occur, nor any other ill whatever to follow an operation of this nature; and that when disaster ensues it is from abuse of the operation. I cannot tell what might be the result of adopting such instructions as the following, which I copy from one of the latest works on the subject. After describing the preliminaries of the operation, the author proceeds thus: "A cracking noise is heard, which becomes more and more evident as the movements are continued, and at the end, it may be, of *half an hour*, the adhesions may have so far given way as to allow of motion in all directions to a very considerable extent, in a joint which had appeared completely anchylosed." I say this is not the manner in which this operation ought to be performed. It is capable of abuse, just as is any other operation; but when it is performed as I have above described it, I do not know an operation more successful than this is in the whole range of surgery, or one more free from danger.

When the joint retains its normal external form, the adhesions are easily broken down by the hand, when the limb is properly placed in position and the full effect of chloroform has been obtained; as you have seen in cases not alone under my care, but, I believe, also under the care of every surgeon of the hospital. I will especially refer, however, to one of the latest cases which has come under treatment in the hospital—namely, that of Mary C——, in Princess's ward. This patient had suffered from rheumatic inflammation, and was admitted into the hospital with partial anchylosis of the knee and of the ankle. The tendo Achillis was divided, and, when the puncture had healed, the adhesions were ruptured by flexing the foot upon the leg. On a subsequent occasion the hamstrings were divided subcutaneously, and, the punctures having healed, the adhesions at the knee-joint were ruptured by flexing the leg upon the thigh. This patient walked well when she left the hospital, and without the least lameness; and the knee and ankle of the affected side were as free as those which had not required operation.

It is a point to remember, that after dividing the tendons, and before the punctures have healed, the adhesions should not be ruptured; or they should be ruptured only with great care, lest the puncture should be extended into a rent. This extension of the puncture is much easier to effect than might be supposed, and it is therefore safer to allow the punctures to close before any force is employed.

In the cast before you (from which Fig. 20 was taken), the articular surfaces do not, as you see, retain their normal positions, but the leg-bones are in part displaced backwards. The case was as follows:—A. H——, twenty-three years of age, had suffered from abscesses about the knee for several years. Both the thigh and leg were much scarred with abscesses which had formed and broken. Portions of the femur had been exfoliated, and a part of the tibia was exposed when I first saw him. There was no appreciable motion at the knee-joint, and the tibia was displaced backwards. The limb was useless for walking; no weight could be borne upon it; so that crutches were always used. I was asked to break down the adhesions, which, however, I declined to do, and advised rather that resection should be thought of. Three days later, however, this same patient again presented himself, and importuned me to attempt to straighten his limb; and at length it was arranged that an examination under chloroform should be made.

FIG. 20.



Eventually the hamstrings were divided, and an instrument was adjusted to the thigh and to the leg, consisting of metallic splints, which were connected with a roller in the popliteal space by catgut cords, and which, acting on the principle of the wheel and axle, when moved, approximated the roller and splints, and thus the knee was bent. I applied this instrument with much misgiving; but, having tightened the cords and applied pressure, the adhesions gave way in an instant with a loud snap. The instrument was immediately disengaged, and the limb was bandaged and supported with splints. Opium was administered, and its effect was continued more or less for three days. At the end of a week gradual extension was commenced; for there was no inflammation after this operation; the leg-bones were replaced, and the length of the limb was restored; so that before he left London my patient walked about his room without a stick. I was assisted in this operation by Mr. Pick and Mr. Potter, and by Mr. Gumpel.

This operation of rupture of fibrous adhesions is usually spoken of as forcible extension of the limb. This term is thus sometimes misunderstood and misapplied; so that, instead of flexing a limb, attempts are made to extend it. This treatment is, however, an entire misconception of the idea, and is likely to lead to mischief. Indeed, such an application of force cannot fail to produce lacerations, and probably abscess, or indeed fracture.

When the position of the limb is perfectly restored, then passive motion should commence. At first it may be necessary to administer chloroform, for motion is painful; but, as motion increases, passive movements excite less pain.

Anchylosis of the jaw takes place either in consequence of cicatrices through injury to the mucous membrane of the cheek, or through inflammation of the temporo-maxillary articulation.

A cicatrix which results from destruction of the mucous membrane, even though it should not extend from one alveolar border to the other, gradually and slowly contracts as cicatrisation becomes complete, until the teeth are firmly fixed, one row upon the other, so that they cannot be separated, and perhaps the only motion of the jaw which remains is a slight lateral motion. This cicatrix may easily be felt by introducing the finger between the lips, and it may readily enough be divided. But this mode of treatment of cicatrices, whether of the mouth or elsewhere, seldom answers its intended purpose. Again, the cicatrix may be dissected out, but another will form, probably harder and more dense than the first. These cicatrices, which result from ulceration and sloughing of the mucous membrane of the mouth, are always preceded by such an amount of painful inflammation that the masseter muscle becomes in a measure affected by it, so that long before the cicatrix has formed to impede the separation of the jaws, the child refuses to open its mouth, and keeps it more or less locked. But this painful condition of the muscle results in structural shortening, so that when the cicatrix has been divided, the jaws can only be separated by considerable mechanical force.

The treatment in these cases should consist, in the first place, of subcutaneous section of the masseter muscle; and secondly, of the application of the wedge, which being first introduced between the teeth, may be forced in by means of a screw. This is the principle of treatment which is applicable to cicatrices in general—gradual extension. The treatment is slow, and demands great patience, that the teeth may not be loosened, for should this happen, it becomes impossible to extend the cicatrix. But should the cicatrix yield to gradual extension after section of the masseter, it will probably not again contract.

Inflammation of the temporo-maxillary articulation may occasion either partial or complete anchylosis, the plastic matter which is deposited being converted into fibrous adhesions, or bony consolidation taking place.

The treatment of these affections of the jaw is greatly complicated by the circumstance of the articulation being surrounded and acted on by very powerful muscles, and also by the circumstance that these muscles—namely, the masseters, the pterygoids and the temporal—are, perhaps, the last of the voluntary muscles to yield to the influence of chloroform, so that when these muscles become relaxed, and the jaw drops, the patient has already inhaled a very strong dose of chloroform. It will easily be understood how this difficulty is increased when inflammation has produced thickening of tissues, with adhesions. When the adhesions are recent, they yield to the long-continued use of the wedge, and the mouth may be opened to its fullest extent. It requires, however, a very long and persevering application of the same means to prevent contraction taking place as before. With a strong will it may be done. It taxes, however, the best efforts of the patient severely. When these measures fail, nothing is left but to divide the masseter subcutaneously, and again to extend gradually with the wedges as before.

When bony anchylosis has taken place, either by fusion or by a bridge of the bone, extending from the lower maxilla to the temporal bone (for these osseous bands not unfrequently follow the course of the ligaments), it is necessary to divide the ramus of the jaw. Whenever it becomes necessary to divide the ramus, care must be taken so to divide it that the false joint shall be formed in front of the impediment to motion, whatever this may be; otherwise the operation will be useless. When, however, the operator has the choice of position, it is well to select the sigmoid notch; less injury is inflicted in this position, and more power remains to the patient. Whether, however, this point be selected or not, a wedge of bone should always be removed, for in all operations on healthy bone there is a strong tendency to reunion when a simple section of the bone is made. Indeed the strongest argument that can be used against the operation is this—that notwithstanding the removal of a wedge of bone, there is a powerful tendency to bony reunion. I have only once seen a case in which bony anchylosis had taken place simultaneously on both sides of the jaw. This resulted as a sequence of gonorrhœal rheumatism.

Complete, bony, or true anchylosis is rare. When it has taken place, a sensation of solidity is communicated on grasping the limb above and below the articulation, such as can only be occasioned by continuity of bony structure. In fibrous anchylosis this sensation is never experienced. Fibrous anchylosis may, however, yield so little motion that with rigid muscles, it may be inappreciable, until chloroform has been inhaled. Therefore, as motion may be thus masked, and as bony anchylosis is exceedingly rare, it is safer not to express an opinion in favor of bony anchylosis until chloroform has been exhibited: then no doubt can exist as to the nature of the adhesions.

Bony anchylosis is the result of inflammation and suppuration within the joint, together with the destruction of the articular cartilages. Anchylosis may, then result between the exposed surfaces of the bones, if the inflammation be of a reparative nature, causing the deposition of new bone. When destructive inflammation ensues, causing necrosis of the epiphyses, bony union is impossible. Diseased action must cease before repair can commence; and bony union is repair. This repair, however, may be of such a character as to be useless, and even worse—detrimental. Such cases then admit of treatment.

Anchylosis is occasionally observed as a congenital affection: the articular apparatus is then entirely absent. But in these cases an inconvenient angle is never found, and the reparative process is as complete as nature can make it.

In bony anchylosis the articular extremities are either bound together in the course of the ligaments, or the bones are united in their entire thickness—two becoming fused into one. It has occurred to me once to see a living person without a single movable articulation: every joint was anchylosed.

I have said, however, that bony anchylosis is rare, but that it may occur at such an angle as to be in the highest degree inconvenient. Under these circumstances this repair, which is intended to be permanent and useful, may fairly be made the subject of surgical interference.

The treatment of bony anchylosis.—There are three operations which may, under certain circumstances, be done, to restore motion or to improve the position of the limb—namely, 1st, to remove a wedge of bone; 2d to break through the anchylosis, after drilling through the new bony formation; 3d, to make a false joint.

It was proposed by Dr. Barton of Philadelphia to remove a wedge of bone, when bony anchylosis has taken place with much deformity, so that the position of the limb might be improved, and he performed this operation on the person of a young physician, whose knee was anchylosed at a right angle. The following is his description of the operation:—

"Two incisions were made over the femur, just above the patella. The first commenced at a point opposite the upper and anterior margin of the external condyle of the femur, and, passing obliquely across the front of the thigh, terminated on the inner side. The second incision commenced also on the outer side, about two inches and a half above the first, and, passing likewise obliquely across the thigh, terminated with the other in an acute angle. By these incisions were divided the integuments, the tendon of the extensor muscles of the leg, at its insertion into the upper part of the patella, and some of the contiguous fibres of the rectus and crureus muscles themselves, a greater part of the vastus internus, and a portion of the vastus externus. A flap composed, therefore, of this structure was elevated from the femur, close to the condyles. The soft parts were next detached from the outer side of the bone, from the base of the flap toward the ham, by passing the knife over the circumference of it, so as to admit of the use of a saw. The flap then being turned aside, a triangular or wedge-like piece of the femur was easily removed by means of a small, narrow-bladed saw. This wedge of bone did not include the entire diameter of the femur at the point of section; so that a few lines of the posterior portion of the shaft of the bone remained yet undivided. By slightly inclining the leg backward these yielded, and the solution was complete."

The limb was supported on a splint at an angle corresponding to that of the knee previous to the operation; and subsequently it was brought into nearly a straight position by using a series of splints; and at length the limb was confined in this extended position until bony union had taken place.

Professor Brainard, of Chicago, proposed subcutaneous drilling and subsequent fracture as a substitute for the operation of Barton; and the operation has succeeded perfectly in his hands, and also as it was performed by Professors Gross and Pancoast at the Jefferson Medical College. The mode of operation was as follows:—

"Chloroform having been administered, a longitudinal incision, hardly one-half of an inch in length, was made over the outer surface of the knee, near its middle, in a line with the groove between the head of the tibia and the external condyle, down to the two bones. Through this opening a steel perforator was introduced, keeping it as nearly as possible in the direction of the line of the articulation, and passing it on to the opposite side until the point could be felt beneath the integuments. The instrument was now moved about in such a manner as to cut through and break down the osseous adhesions between the femur and the tibia on the one hand, and the femur and patella on the other. The union between the bones was exceedingly firm; but, after much difficulty, it was finally overcome, and by a forcible extension of the limb, the parts yielded with a cracking noise."

When it is desired merely to gain a better position of the limb, one or other of these operations may be performed where bony anchylosis with great deformity has taken place.

The third operation to which I have to direct your attention is that of establishing a false joint after section of the bone. This operation also was proposed and performed by Dr. Barton of Philadelphia. Dr. Barton's case was as follows: Fracture of the femur had been followed by anchylosis at the hip-joint, and an angular union of the broken bone had resulted; so that the thigh was flexed, and the knee was carried across the opposite thigh. Barton cut through the femur, and straightened the limb. The wound of the soft parts was allowed to heal, but reunion of the divided bone was prevented by subjecting it to motion from time to time—such as rotation, flexion and extension, abduction and adduction. After some few weeks the ends of the bones became smooth and rounded, and united by means of ligamentous bands; and thus an artificial joint was formed, which allowed of all the motions of the limb. This patient enjoyed the use of his artificial joint for six years; but after this time he gradually lost motion, and anchylosis took place.

This operation of Barton's was an admirable one, and the result, so far as it went, was excellent. There was this defect in it, however—that the section of the bone was made too far away from the original centre of motion. When it is desired to re-establish motion in an anchylosed joint, the section should be made as near as possible to the centre of the articulation, so that the power of the muscles may not be unduly diminished. And with this view I operated, in 1861, on a case somewhat similar to Dr. Barton's, where bony anchylosis was complete, but where there existed also some necrosed bone about the acetabulum. In this instance I cut through the neck of the femur immediately below the head of the bone, and then gouged away the remains of the head and the dead bone from the acetabulum. The wound healed almost in its entire extent by the first intention, and in three weeks it was firmly cicatrised, so that passive motion could be freely employed. In six weeks from the operation my patient began to use the limb in walking. This patient was a delicate person, and had not sufficient fortitude to continue the treatment which is necessary in these cases to retain free motion.

In the next operation of this nature which I undertook, I removed the whole of the neck of the femur, and in consequence the fibrous connecting bands were somewhat longer and less firm, and from the commencement motion was more free than in the former case. My patient also was in good health, and carried out with a strong will my injunctions with regard to motion. In these cases it is important to continue passive motions of the limb, otherwise shortening of the uniting medium, with more or less loss of motion, may take place. Also a chronic form of inflammation may be set up in cases of this kind, whether by accident or otherwise, which may result in loss of motion, just in the same manner as it may be set up in cases of fibrous anchylosis, where motion has been perfectly restored. Thus, in a case on which I operated in 1856, motion at the hip-joint was perfectly restored, and my patient could walk easily, and without pain or unusual fatigue. He did not require a stick for support, and he habitually took much exercise. Motion at the operated joint was as free as in the other limb; but in 1867 he unfortunately fell on the ice and struck his hip, when inflammation followed and tough adhesions were formed.

At the hip a false joint should be made; while at the elbow or at the knee a wedge of bone may be removed, or the anchylosis may be fractured after drilling through the bone.

Clinical Lecture

ON THE

TREATMENT OF FRACTURES OF THE LEG.

By James Paget, F.R.S., D.C.L.,

Surgeon to St. Bartholomew's Hospital.

(Shorthand Report, revised by the Author.)

I wish to speak to you this morning, gentlemen, about what we may well call our Christmas fractures. The daily moralists have given their lessons upon them; and I will see if I can teach mine—chiefly on the manner of managing fractures of the leg.

On Boxing day and night there were brought into the hospital eleven cases of fracture of the leg, of which eight were fracture of the tibia and fibula, and three were fractures of the fibula alone. Besides these, there was admitted one case of fracture of the upper part of the humerus, close to the joint, which was so nearly a compound fracture that it was unsafe to let the patient pass out of the hospital. I need not say that, besides these, a great many cases of other injuries were treated in the surgery without being admitted. During the week, also, independent of the Christmas work, there were admitted two cases of fracture of the tibia and fibula, and two of fracture of the femur. You have thus had a considerable store of fractures from which to study the common manner of treating them which we adopt here. That treatment is perhaps not the best possible; but I venture to say that it is an exceedingly good one, and yields sufficiently good results to enable me to state that with it you will very rarely see a limb sent out of the hospital crippled, or useless, or indeed in any material degree permanently damaged by the fracture.

I have brought in here the model of a leg put up after the fashion which is commonly adopted in my wards in the hospital—a fashion, I believe, in all essential respects the same as that usually adopted by my colleagues.

All these fractures that I have mentioned were put up at once. That is the custom which we adopt here. I think that, as you watch fractures, you will find that there are very few instances indeed in which you need depart from this rule—very few in which the damage done is such as to make it at all advisable to leave the fracture for a time, imperfectly at rest, on a pillow for any supposed righting of the fragments, diminution of swelling, or other supposed change for the better. I do not say that there are no such cases; each case is to be judged upon its own special grounds; but you may always begin the treatment of a fracture with a strong prejudice in favor of putting it up at once.

With regard to the manner of putting up a fracture, you will always have your choice of what is called the immovable apparatus, with gutta percha, and starched bandage, or gum and chalk, or what I more commonly use, plaster of Paris. There is no question of the considerable advantage of these in the commonest and simplest forms of fracture of the lower or upper extremity; yet I think that this apparatus should be used among out-patients only when you can be sure that the patient possesses sobriety and intelligence enough, and home comfort enough, to be able to manage his apparatus in some measure for himself. And the security of putting up fractures with splints and suspending them, as we do here, is so much greater, that if we have to admit the patients into the hospital, and to keep them here, we always adopt this plan first, except in the very simplest form of fracture of the leg. It is of this manner that I am now going to speak to you—the manner in which, in my wards, we put up fractures of the leg, whether of tibia and fibula, or of either bone alone.

Here is the apparatus, the principal thing about which I take to be this back splint. As you look at that and compare it with the back splints commonly made, you will see first that it is narrower than they are; so that for a man of full size the splint is not usually, at its widest, more than three and a half inches wide. It is narrowest about the ankle, where it is two and a half inches wide, and beyond which there is a large opening in it for the heel. Moreover you see the splint is nearly flat transversely; it is not hollowed out, as it is supposed it should be, to fit the back of the limb. Then it is very little curved; so little curved that you will say that it could not fit the leg of a very robust man. The calf, you would say, could never rest on that. But you must remember that you want a splint that is to fit the leg, not only at the time of admission, but also, and much more, the leg as it will be some ten days or a fortnight afterwards, when the leg has begun to waste, when the calf has fallen flat—gone to nothing. On a very curved splint, one that fitted the leg in the first instance, there will be no comfort after the lapse of a week, when the leg begins to waste. This splint is perfectly simple in its structure, a long and nearly flat piece of iron, bent at a right angle for the foot, and having two short transverse bars projected from its sides and looped to receive the slings. I would have you observe the direction of the foot-piece, which is simply turned up from the back-piece of the splint, and turned to very nearly a right angle with the line of the back part, quite straight, narrow, and perfectly simple. On that arrangement of the foot-piece depends mainly the arrangement of the limb.

Besides this there are these two flat, wooden side-splints, duly padded like the back-splint, and with care taken that they should be sufficiently long for the ends to project a little beyond the foot-piece of the back-splint, and to reach to some three or four inches above the patella. They should, moreover, always be broad enough to enable the straps that are put round them completely to encompass them without touching the leg. It is important for the comfort of the patient that no strap should come in contact with the front of his leg; and, after all, however one may regard anatomical considerations in putting up a fracture, the one most essential idea is that of comfort. If the patient is so disquieted by any of his apparatus that he cannot lie well or sleep well, the good progress of the fracture is a thing hardly possible; and great disquietude is produced by straps, bandages, or cutting edges of any kind which come in contact with any part of the skin.

The rest of the apparatus consists simply of pads stuffed with tow, one for each splint; and of the means, which I will presently speak of, for securing the foot to the foot-piece, and the knee to the back-splint; and then, besides, the simple cradle that we have, with the double bar on the top for suspension by the loops of the transverse bars fixed to the back-splint. There is also a prolonged piece of iron from the distal end of the cradle to secure that the bed-clothes shall in no case touch the foot-piece or any part of the apparatus, or the patient's leg.

Then observe how the patient's leg is set upon this back-splint. I do not speak of the manner of reducing the fracture; that must depend on the considerations that I spoke of the other day. The limb having been put into a right position, it is simply laid on the back-splint, with no additional pad beyond that which is fastened to the splint itself, unless in some cases where there is a great hollow above the os calcis, and then it is very useful to have a pad under the tendo Achillis—an additional pad to that with which the splint itself is covered. But the chief thing is the fixing the foot to the foot-piece.

You will observe, if you examine fractures of the leg that have united badly, that there is not one way, but several, in which the leg may be spoiled. First of all there is shortening. That comes, generally speaking, either from the fracture being so oblique that it is hardly possible to prevent one portion of the bone from sliding on the other, or from insufficient extension having been used at the time of setting. But there are other distortions which are really worse than shortening, for shortening can be corrected by adding something to the sole of the boot or shoe. A worse distortion than this is when the foot is rotated outwards, so that when the man gets up from what is supposed to be the cure of the fracture, he walks with the toe of the fractured limb not directed forwards like the other, but rotated outwards, a position in which firmness of support is hardly possible. And there is a worse thing than that. It is when the patient rises from the fracture with the sole of the foot either inverted or everted, so that from that time he has to walk, not fairly on the flat of his foot, but on the outer or inner margin of it. It is from want of care in reference to that distortion that fractures of the fibula are sometimes followed by one of the greatest miseries that can result from fracture of the lower extremity; for when a patient is consigned for life to walk on the inner or outer margin of his foot, he loses I know not how large a proportion of the proper strength of his limb, and nearly all the comfort of his walking. He is in the position of a person who has been congenitally deformed, so as to walk on an inverted or everted foot. He is as ill off as those with varus or valgus; nay, he is in a worse condition than they are, because his case, depending as it does upon distortion of the bones, and not of the joints, scarcely admits of repair. No apparatus can put a patient into comfort who rises from a fractured fibula or fractured tibia and fibula with this defect.

Take, therefore, the foot-piece of the splint as the guide for the position of the foot; and if you do but see, in the management of fractures of the leg, that the foot of the patient and the foot-piece of the back-splint fairly correspond, it is hardly possible for the limb to fall into any of these defective methods of repair. That correspondence between the axis of the foot and of the foot-piece ensures that there shall be no rotation or version either outwards or inwards. Then, again, you should be careful that the foot touches the foot-piece by the three balls of the sole—the ball of the heel, the ball of the great toe, and the ball of the little toe. If the foot is set against the foot-piece so that these three chief points, upon which in standing or walking it rests, are in exact contact with the foot-piece, or nearly and evenly approximated to it, when the patient rises with the fracture healed they must hold the same position, and he be ready at once to bear his weight upon these three points. For the rest, this upper curved part of the splint must come in contact with the popliteal space, and you will observe that this upper part is very little curved, so that the limb is very little bent at the knee-joint. That is a most important thing to attend to, for if there be too abrupt an angle at the popliteal space, there is almost sure to be more or less pressure on the popliteal vein, and then consequent œdema of the leg, and the troubles that ensue from that.

When the limb is thus laid upon the back-splint, and the foot accurately adjusted to the foot-piece, it is secured in its position by the apparatus that you see here, formed of gutta-percha, with layers of flannel or of old blanket put underneath it. These were adapted by Mr. Vernon at my request when he was my house-surgeon, to correct what I am sure is a source of considerable trouble in the management of fractures of the leg—the pressure consequent upon bandages encircling the limb, and constricting it. They produce œdema of the whole limb, above and below the seat of fracture, and that œdema is often fraught with very evil consequences. Look carefully, therefore, to this—that there are no bandages constricting the broken limb You will see that we never apply a bandage next to the limb, and within the splints. That is a custom of treating fractures which is sometimes adopted, but in which, when splints are used with proper pads, I can see nothing but evil. It serves no purpose to the limb itself by its compression, and it sometimes does considerable mischief by compressing veins when the limb begins to swell. It also conceals the limb from your view; whereas, in every fracture that is under treatment, you should, as far as possible, see not only the seat of fracture, but all the adjacent parts of the limb, and have these at all times fairly under your inspection.

Then, even when the bandages immediately surrounding the limb are left out, it is not unfrequent to bandage the foot to the foot-piece and the lower part of the back-splint, and to bandage the knee and the adjacent parts to the upper part of the back-splint. But these bandages have, in like manner, a tendency to produce œdema, especially the bandage of the knee; for if you bandage the knee close down upon a firm back-splint, and it has to lie there week after week for five or six weeks together, the result almost certainly is that, by pressure on the popliteal and saphena veins, œdema will ensue below the constricting bandage—œdema at and about the seat of fracture.

Now observe the different sorts of œdema that are apt to ensue in fractures of the leg.

First, there is that general œdema of the leg which comes on from the mere injury; harmless and subsiding of itself when the fracture is put into a proper position. Then there is the œdema which sometimes comes from these encircling bandages—an œdema more full of mischief. Another form is that in which the foot is hung too much below the level of the knee, as it is in the old apparatus sometimes employed of the double-inclined plane, where the knee hangs over an angle, and the foot hanging low down, is sure to become œdematous. And then there is another kind: that œdema which we have been observing of late, which seems to depend almost entirely upon irritation of the veins of the limb by hard edges of bandages, and consequent clotting of the blood in the veins. There is a woman in Lawrence ward who shows this kind of œdema. After the fracture of the leg had been repaired well in the ordinary apparatus, a plaster-of-Paris bandage was put on, and its edge rubbed against a part of her saphena vein. Trivial as it may seem as a cause of so much distress, this is a cause which I have now seen in several cases. At the part irritated, the blood clotted, with pain and tenderness of the vein, and the clot began to gather other clots at both its ends; and so it went on till the greater part of the saphena vein was obstructed by clots, extending by means of this thrombosis, which Mr. Callender has particularly described in our Hospital Reports. One vein after another, in these cases, becomes filled with clot, till at last a firm, solid œdema of all the parts supplied by these veins ensues—an œdema which does no harm, to be sure, to the union of the already repaired fracture, but which disables the patient from the use of the limb for some eight or ten weeks after the fracture has healed.

There are, then, these four kinds of œdema which we find associated with fractures of the lower extremity; but the œdema that I wish to speak of especially is that which results from constricting bandages, whether put next to the limb, or so as to enclose the limb and hold it down to the foot-piece and the upper part of the splint.

See what mischief this œdema does. First of all, it adds very much to the sufferings of the patient by increasing the weight and tension of the limb, and consequently increasing his restlessness also. But then, if the limb is œdematous, all its nutritive powers are impaired, and I cannot doubt that sometimes the delay of the union of fractures is due to this cause. The proper circulation through the limb is retarded by pressure upon the veins, and the whole process of repair is hindered. But there is another trouble. It is this œdema which adds to the probability of the occurrence of "sore heel," as we have to call it, in the treatment of fractures of the lower extremity. Of all the vexatious interrupting the progress of a fracture, this is one of the chief, not only interrupting the progress of the fracture, but very much prolonging the time of the patient's convalescence, when, after recovery from his fracture, he gets up with a slough on his heel, or on the upper part of the os calcis. It is a thing which you should be very careful to avoid. One of the means of avoiding it is, that the back of the splint is perforated by an aperture for allowing the heel to project a little through it, so that the heel does not rest against the mere hard surface of the splint, even though guarded with a pad. But another thing is that the heel should be kept from all sources of inflammation and œdema; for it is through these chiefly that the heel has a tendency to slough. If you will watch the different progress of cases of simple and compound fracture, especially of compound fractures followed by acute inflammation of the whole limb, you will see that in the one case the heel has little, while in the other it has more, tendency to slough, even though the manner of putting up be the same. Where there is inflammation, the whole nutritive processes of all the textures of the limb are very much lowered, and that not at the seat of fracture alone, but in every part of its extent. Then the heel, or anything else that is much pressed upon, is likely to slough. So with œdema. The whole nutritive power of the limb is impaired: and the heel firmly held down, becomes excoriated or sore, and the recovery of the patient is seriously retarded.

In this apparatus, then, you see no constricting bandage encircling the limb at any part. The foot is held to the foot-piece by a layer of gutta-percha, which is placed, while soft and warm, across the whole dorsum of the foot, separated from the skin by a layer of flannel, and, coming over the edges of the foot-piece, is fastened there with tape or string. The knee is held in the same manner; a layer of gutta percha, separated from the skin by flannel, is put over it, passes beyond the edges of the side-splints, and is held in its place by two straps and buckles. Moreover, to avoid the necessity of straps or bandages around the side-splints, these are held together, not only by the gutta percha and the straps which encircle it, but also by two transverse bands, which buckle across their lower end, and across and beyond the foot-piece. With that apparatus is fulfilled the design of having a limb held steady enough to its back-splint, without any place in which it is encircled by a bandage—without any place therefore in which any constriction is put upon its veins or other textures.

That which may seem to you as the defect of this apparatus is that there is no sufficient provision for the application of a continuous force of extension; and, for all that you see, the two fragments might here ride the one over the other, being so little held, as they may seem to be, by the layers of gutta percha. But remember how very little there is to displace the fragments of a broken limb when once it has been put fairly into place and put at rest. As I explained to you the other day, the muscular contractions, which are supposed to be the means whereby the fragments of broken bones are displaced, cease after the first three or four days; so that if an apparatus is only so adjusted that it may keep the limb during those days from all risk of muscular contraction, there is no risk of disturbance from this cause afterwards. See in the ward, now, a man who was admitted some weeks ago with fractured patella. On his admission the fragments of the patella were at least an inch apart. The limb was laid simply upon its back, level with the trunk; and at first it was quite impossible to retain the fragments together, or to bring them nearly into contact. But day after day the muscles, contracted at first, gradually relaxed, and then, of themselves, and with the contraction of the adjacent textures, the two fragments of the patella came close together—to within, at the most, a quarter of an inch. There is no risk of muscular contraction displacing the fragments of a broken bone at any time after the first three or four days. At least the case would be quite extraordinary, and require very special treatment, where such an accident would occur.

Upon this apparatus, then, all these eleven fractures were put up. Those of the patients who had only fractured fibula went out in the course of the next week or ten days, with plaster-of-Paris bandages. The other cases, of fracture of the tibia and fibula, are kept in the hospital, and there you may still watch them. At the end of three or four weeks all but two, who have serious complications, will be put up with plaster-of-Paris.

(*To be concluded.*)

Clinical Lecture
ON
NERVOUS DYSPEPSIA.

By Arthur Julius Pollock, M.D.,
Assistant-Surgeon to Charing-Cross Hospital.

The form of indigestion, which may without impropriety be termed "nervous" is, perhaps, one of the commonest disorders that we meet with among the out-patients of an hospital; but it is by no means confined to that class of persons. The privations, the bad food and bad air, and the depressing circumstances under which only too many of the inhabitants of large cities live, are strong predisposing causes of many diseases, but especially so of functional disorder of the stomach.

Of the two sexes, women suffer more and in larger numbers from this nervous dyspepsia than men; and particularly at that period known as the "change of life." But the disorder is by no means rare among men, and is usually associated in them with some form of hypochondriasis.

Many of the symptoms of nervous dyspepsia are so allied to those of ordinary hysteria that, without some discrimination, the essential and fundamental mischief—functional disorder of the stomach—may be overlooked. The nervous symptoms are, in most cases, entirely the result of the indigestion: remove that, and they pass away.

Let us examine an ordinary case of the disease. The patient will complain of pain in the chest or "heart," which goes right through to her shoulders, and is often so bad that she can scarcely breathe. It comes on in spasms, and is often accompanied by palpitation of the heart, giving rise to a fear that that organ is affected. These pains usually occur after food or drink; and sometimes even a cup of tea will bring them on. There will often be a good deal of wind in the stomach and bowels, which latter are generally constipated. The urine is high-colored and scanty, or thick; the tongue coated, as a rule, with a yellowish fur, though it will not unfrequently be found quite clean or unnaturally red. She is sick at times, occasionally bringing up her food, but often nothing but water. The appetite is bad, the breath foul, and there is an unpleasant taste in the mouth, especially on waking in the morning.

The nervous symptoms are very various: great lowness of spirits and depression; anxiety without any cause; an undefined dread of some impending evil; hot flushes and chills; the noise of her children distracts her; she cannot walk out in the streets, as the air feels "too strong" for her, and the number of people makes her very nervous; there is frequently headache, generally referred to the vertex, which she describes as feeling hot; her head "opens and shuts" at times; sometimes there are strange noises in the ears; icy chills run up the spine; there are curious sensations in the stomach and abdomen, as if something alive were in the bowels; flutterings about the epigastrium; a ball rising in the throat; &c. The catamenia are sometimes regular, sometimes occuring at intervals of three months or longer; and if the latter, the patient will attribute many of her uncomfortable sensations to "those things flying about her." Not uncommonly such a patient will have ceased to be poorly for a year or two.

The treatment of such a case is sometimes very simple and satisfactory: a few doses only of medicine, and a strict attention to the diet, bringing very great relief. More often, perhaps, the symptoms are rather obstinate, and it may take some weeks to effect much improvement. If the bowels are costive, the water thick or high-colored, and the tongue coated, I generally begin by giving a mixture containing three grains of carbonate of ammonia, half a grain of ipecacuanha powder, three grains of rhubarb powder, twenty grains of bicarbonate of potash, to one ounce of peppermint water,—three times a day, half an hour before meals; adding to it, if the nervous symptoms are prominent, half a drachm to one drachm of tincture of valerian. With this I order some pills—the pil. aloes et assaf. of the British Pharmacopœia, five grains at night when necessary; or, if the bowels are pretty free, five grains of assafœtida every night. I have reason to believe that the assafœtida is often very useful as a nervine tonic, and in assisting to expel the wind; and I have been asked, over and over again, to give some more of "those" pills, in spite of their nasty smell and taste.

If there is much sickness, bismuth and chloric ether may be of great service, with or without the rhubarb and potash, and especially in those cases where the tongue is unnaturally clean. I have not found much benefit from prescribing the liquor potassæ in nervous dyspepsia, nor from the dilute nitro-hydrochloric acid in the early stage, though at a later period this acid, with the compound infusion of gentian, is most useful in giving tone to the stomach. When the tongue becomes clean and the stomach less irritable, quinine will often complete the restoration to health; but I feel sure, from frequent experience, that it is worse than useless in the early stages, when the tongue is thickly coated and the stomach very sensitive.

Perhaps, however, the most important part of the treatment consists in great attention to the diet, and without which we cannot expect much from drugs. The food should be light and nourishing; it should be well chewed before swallowed; plenty of time should be taken over a meal, and not much food taken into the stomach at one time. It is difficult, from the circumstances of many patients, to get all this attended to, but most of them can do something towards it. I think, with regard to beverages, that, as a rule, it is best to avoid beer, by which I mean malt liquor of any kind; and to replace the tea which is often drunk in excess, by cocoa and plenty of milk. Weak cold brandy-and-water may be taken with advantage at dinner in many cases. With regard to beer, several patients have told me that it is their only comfort, and seems to support and warm them; but I believe these feelings of comfort and support are usually dearly purchased by subsequent acidity and flatulence, and I am very hard-hearted and firm in objecting to the use of malt liquor—for a time, at any rate. Most dyspeptics have no appetite for breakfast, and, I conceive, suffer a good deal in consequence from emptiness and flatulence. I have reason to know that taking breakfast for a few mornings, even much against the grain, will eventually create a desire for food at that time of the day; and as it is perhaps the most wholesome meal of any, much comfort will ensue. I need hardly say that heavy suppers are most injurious.

Original Papers.

ON THE NUTRITIVE VALUE OF DIFFERENT SORTS OF FOOD.

By Baron Liebig.

(Continued from April No.—p. 193.)

The performance of man depends on the tone of his nerves, and it is therefore comprehensible, when we consider the endless demands made upon him, that things which act on their condition become for him necessities. They act on his *will*, and accordingly on the acts of the individual; on the employment of his existing strength to face opposition, to overcome difficulties, or to brave outward influences which he otherwise would have evaded. A glass of wine, like an outward bodily pain, a few boxes on the ear, or blows with a cudgel, often, with regard to the tone of the nerves, produce wonders.

As to the effect of coffee I will confine myself to quoting what Július Froebel, in his most interesting work, "Seven Years in Central America," says on the subject. "For the men accompanying the great mercantile caravans in Central America coffee is an indispensable necessity. Brandy is taken as medicine, but coffee is quite a necessary article, and is drunk twice a day. The refreshing effects of this beverage in heat and cold, in rain and dry weather, are extraordinary."

The use of tea and its wide-spread enjoyment is founded on quite similar effects—that of maté in Paraguay also, and of the gurn-nut in the interior of Africa; and it cannot fail to excite our utmost astonishment when we learn that the same substance, caffein, to which we attribute the specific effects of coffee, is also to be found in the leaves of the tea-plant, in those of the ilex species—a decoction of which is drunk in Paraguay, as we take tea;—and finally, too, in the gurn-nut (Sterculia acuminata).

We must presuppose that if these stimulants did not satisfy some powerful want of our organization men would hardly take the trouble to seek them, and that instinct should, in so wonderful a manner, among a countless number of plants, choose just such as produce substances inducing the same effect, shows that one and the same gap exists in the nutrition of man in all countries and all zones, and in the same manner is sought to be filled up.

In tea or coffee we obtain certain advantages for furthering the performance of mental or bodily functions, for warding off outward disturbing influences on the state of our health—in short, for the preservation of a normal equilibrium which is not exactly to be defined. If these drinks had not such effect we should soon tire of their enjoyment.

To these stimulants belongs the extract of meat, which is nothing else but a concentrated meat-broth, of the consistency of treacle.

The meat-broth contains those parts of the meat which can be extracted by means of water: hence the name, "extractive substances" of meat. These are combustible and incombustible substances. The latter are phosphates, to be found also in tea and coffee. The greater mass of the combustible substances consists of very nitrogenic uncrystallisable substances, the nature of which has not yet been discovered; also of three crystallisable substances—creatine, creatinine, and sarcine, of which the latter two belong to the same class of combinations as caffein. This is the remarkable class of the alkaloids which includes the most effective medicines, such as morphine and quinine; and the most fearful poisons, such as strychnine, coniin made from hemlock, nicotin, and others. In its composition caffein is nearest related to the creatinine of meat-broth. None of the extractive substances of meat are to be found in vegetable food; they are the products of the animal body.

In China and Japan there is no cattle breeding; all the land fit for tillage is exclusively devoted to producing food for man. The Japanese and the majority of the Chinese are forbidden by their religion to eat meat; the same with the Sintoos in Japan and the worshippers of Buddha. We know that the milk sold in the streets of Canton is woman's milk, and is employed for the sick. In many lands of the torrid zone, as in Western Africa, no cattle can be bred for the sake of their flesh; as during the dry season all the grass disappears, and to make hay during the rainy season is impossible.

If we consider that tea, coffee, and the gurn-nut all come from lands where meat is one of the rare enjoyments of the population, we are led to believe that the value of these stimulants consists in their being a substitute for meat-broth, and in partly replacing its effects. The fact that the English, Dutch, and North Americans, who are the greatest meat consumers, also drink the most tea, is not an argument against this opinion; for they use also the largest amount of extract of meat, and Great Britain alone takes one-third of all the quantity exported from South America.

By roasting coffee too much the effects which it has, in common with tea, are essentially diminished. The caffein evaporates, and, in the beans left behind, one has a quantity of scorched substances, which in their effect on the organization may be replaced by roasting other vegetable substances—such as chicory-roots, figs, &c.

It deserves notice that a decoction of pekoe or souchong tea always contains a certain quantity of iron and manganese peculiarly combined, and strong tea about as much as a weak chalybeate.

The particular value of meat-broth as a stimulant is shown when we compare, according to their component parts, bread or flour with meat.

Flour.—Albuminate, heating matter (starch), and nutritive salts.

Meat.—Albuminate, heating matter (fat), nutritive salts, and extractive substances.

Meat, accordingly, is distinguished from bread and vegetable food by its containing a number of remarkable substances, which are here comprised in the name "extractive substances." If by soaking or boiling meat the water drew out these extractive substances only, its nutritive value would not be less than before; but the water extracts from the meat the greater part of the soluble nutritive salts, and it is this, and not the removal of the extractive substances, which is the reason why the meat residue has no further nutritive worth. We may assume that, by adding the missing nutritive salts, the said residue will regain the original nutritive value, but it will be no other than that which belongs to bread.

Meat food, as was said, possesses, besides the nutritive worth which it has in common with bread, in certain conditions an advantage over it, on account of the greater digestibility of the meat albuminates, and their quicker transmission into the circulation of the blood. But in this respect milk and cheese are not behind meat food. The latter, moreover, has another quite peculiar effect on the nervous system, which we denote by the words "tension," "tone;" and that this is produced by the extractive substances cannot be doubted.

It is essentially their food which makes carnivorous animals, in general, bolder and more combative than the herbivorous animals, which are their prey:—

"A bear kept at the Anatomical Museum of Giessen showed a quite gentle nature as long as he was fed exclusively on bread, but a few days' feeding on meat made him vicious, and even dangerous. That swine grow irascible by having flesh food given them is well known—so much so, indeed, that they will then attack men."

The extractive substances of flesh, which make up twelve per cent. of the dry muscular tissue, decide accordingly the meat value of flesh, by which I intend to designate the worth exclusively belonging to a meat diet, or the effects by which it differs essentially from vegetable food.

Soup, bread, vegetables, puddings, ham, cheese, &c., are component parts of our meals; and all these different victuals lose something of their nutritive value because of the absence of the nutritive salts. Bread, for example, will on that account not be thoroughly digested; it produces the most excrement; and thus all the above-named sorts of food leave a residue, which burdens the intestines and produces a sickly state, just as if to the perfectly digestible elements of any sort of food a portion of something indigestible or useless was mixed up with it. The experienced cook endeavors to amend this defective quality by his sauces and condiments; and he employs for the purpose, besides kitchen herbs, an extract he has in store prepared from broken bones, odds and ends of meat, &c.; but as these latter contain generally but very little muscular flesh, this stock made by the cook is always poor in the nutritive salts, but all the richer in glue, which contributes nothing either to nourishment or to the improvement of food. A perfect compensation is only to be obtained by using a concentrated meat broth, which of all similar preparations abounds most in nutritive salts. The delicate, full flavor which the food acquires by it shows the cook that in this way he most easily obtains what was wanted; and he who tastes the dish experiences by his digestion if the cookery were good or not. A dish well prepared is distinguished from one badly cooked by being more easily digestible, and this depends on its mixture, the time occupied in digestion, and on its solubility and divisibility in the stomach. The latter—which is important, but is not the chief thing—is what the inexperienced cook most cares for; he deceives our tastes by unfitting spices, and so spoils the best materials. Simple dishes, well prepared, are what the epicure values most.[*]

The culinary artist might learn much from our farmers and cattle breeders. The latter know of what importance the right proportion of the several nutritive substances is for the nourishment of plants and cattle. As regards nourishment more is done for cattle than for man, and yet a man is the dearer object of the two, and at the end of a war we learn how high a price had to be paid for a man and for human strength.

There is no longer a diversity of opinion among farmers and cattle breeders as to the principles of nourishment. Their insight has taught them to call into existence peculiar institutions where the nutritive value of different sorts of fodder may be scientifically and practically examined and determined; where they learn what mixture of food will enable them, at least expense, to obtain the greatest amount of meat, milk, wool, or work. The practical realization of a theoretical acquisition has led them to make science the foundation of their business. From being empirical journeymen they have raised themselves to be a class of thinking workers, who, as regards mental range, will very soon surpass every other industrial class, and before long will give society a totally new impress.

In what relates to the nourishment of man we are in practice a century behind; and if we have to decide on the best and most economical way of feeding a certain number of men in prisons, houses of correction, or poor-houses, or of soldiers in peace or in the field, we meet with the most lamentable contradictions, and the matter, finally, is left to chance.[†]

In his work on the Origin of Medicine, Hippocrates says: "And this I know for certain, that the quality of our food and of bread exercises great influence on the health; and how can he who does not heed this, or does not understand this influence, understand the diseases which attack man? It seems to me necessary, therefore, that the physician should be acquainted with nature, and strive, if he will fulfil his duties, to discern what man is in relation to his food and drink and his occupations, and how his food affects the individual person. If the same nourishment were fitted for the patient as well as for the man in health, nobody would have sought for medicine. To know what food is proper for the sick, this it is which constitutes the physician."

---

[*] The fungi used by the cook in his sauces—truffles, mushrooms, &c.—contain, wonderful to say, the same nutritive salts, and also in nearly the same proportion, as meat; and in taste fungous broth greatly resembles meat broth. A closer examination of these might lead to interesting results. In Siberia, even toad-stools, in spite of their poison, are not despised.

[†] The following are the "field rations" of the soldiers of the army of one of the middle German States:—Roasted coffee, twelve ounces; rice and sugar, two pounds eight ounces. By the term "field rations" is meant the food which the soldier carries with him in the field, and which is only to be resorted to in cases of the greatest necessity, and when there is nothing else to be had. Coffee, as a stimulant, is of great value, but it is not nourishment. Sugar is a heat-giving substance, and rice comes in nutritive value after the potato. The soldier accordingly is obliged to drag about with him two pounds twenty ounces of substances which, if they nourish him at all, do so only very imperfectly. Coffee, as was said, is a good thing, and may be drunk without sugar, as in the East. To expect a man to chew rice, or to eat it boiled in water, without salt or butter, is demanding rather too much. With a pound and a half of ship's biscuit, made of unbolted flour, and a few ounces of extract of meat mixed with salt, or a piece of smoked beef sausage, the soldier would do much better.

Were a new Hippocrates to arise in our day he would produce, doubtless, with the help of the laws of nutrition which science has laid down, a total revolution in the curative art; but for the greater number of our physicians diatetics are an unknown field, although the most sagacious among them are unanimous in asserting that by a right choice of food in the period of development and in advanced age many diseases and much suffering might be avoided.

One of my friends, a celebrated physician, said to me, when adverting to his success in his practice, "The curing of illnesses is always a doubtful matter: the secret of my success consists in my making it my chief aim to keep those confided to my care in good health."[*] He asserts that the children of the wealthy are generally brought up to be gluttons, and that their naughtiness and their distaste for learning or for work arise more from the state of the stomach than of the head.

(To be concluded.)

ON SOME OF THE FUNCTIONS OF THE MIDDLE AND INTERNAL EAR: AND THEIR ANALOGIES.

By Peter Allen, M.D., F.R.C.S., Edin.

(Continued from April No.—p. 195.)

The membrana tympani.—It is surprising that, with all our novel and improved instrumental methods of examining the membrana tympani, and with our more correct knowledge of its anatomical and pathological characters, aural surgeons have not yet succeeded in recognising with any degree of distinctness and precision the exact atmospheric alterations which occur in the tympanic cavity when submitted to the before-mentioned experiments, especially as the latter are in use for diagnosis. When we find writers of high reputation as aural surgeons describing so diversely the changes manifested in the cavity and membrane of the tympanum and in the Eustachian tube, when submitted to auscultation with the otoscope, to inspection under most favorable illumination, and perhaps to exploration with the catheter,—the question occurs, How did the errors involved in the statements of these observers arise? And what methods of examination can be substituted or added without increasing these already too numerous discrepancies? No attempts, however, to further our present physiological knowledge, or to incite practitioners in aural surgery to avail themselves of, rather than despise, microscopic discoveries and all new aids to examination and diagnosis, can possibly be effectual, unless they more generally cultivate an intimate acquaintance with the structure of the part whose diseases they treat, and become more enlightened in acoustic science.

Great diversity of opinion as to certain functions, and as to the phenomena presented by disease of an organ partially hidden from view, will always continue to exist among the most intelligent and accurate investigators; but when the anatomy of a part which is not internal has been clearly made out and defined, it appears almost incredible that we should still meet with such errors of description as the following, in one of the Manuals most extensively advertised and circulated:—"The membrana tympani is composed of muscular fibres, which concentrate towards the extremity of the malleus." "The manubrium of the malleus will be plainly seen approaching the membrane from above downwards, and slightly attached to it in the lower third of its disc," and "mucous membrane lines both sides of it."

While regretting that the true anatomical characters, position, and relations of the membrana tympani should have been so mistaken and fallaciously described by any aurist, it would be inconsistent with my present plan to introduce any detailed notice of its structure. The results of carefully conducted dissections and microscopical examinations of the drum and its membrane will be found set forth in the late Mr. Toynbee's treatise on the Ear, to which the reader is referred for the fullest information on the subject. We who look at this membrane so often, view it not alone in its functional aspect, but also recognise that it has a most unquestionable bearing upon the pathology of the middle ear; for by a thorough inspection of its outer surface we are able not only to define its own deviations from the healthy condition, but also to diagnose abnormal changes beyond, in the tympanum.

I now go on to consider the motion-phenomena exhibited by the tympanic membrane when subjected to experiments with the view of ascertaining its degree of elasticity and vibratile power. Some of these experiments become reliable means for diagnosis, and are even practically useful as therapeutic agents; their value, however, in both cases depending upon a correct perception of their effects.

The following extracts from a few authors who have endeavored, in recent times, to extend the field of aural physiology are given to show, not only the difference of opinion which exists as to the action of the membrana tympani when under the influence of air-pressure, but that the employment of a sensitively constructed manometer would have determined, without fallacy, the functional changes in the drum and its membrane, which have not hitherto been satisfactorily made out.

Toynbee caused the patient to swallow with his mouth and nose closed, while he applied the otoscope to the ear; and he asserts in his work that there will be heard at the moment of swallowing, "most distinctly, a faint crackling sound, produced apparently by a slight movement of the membrana tympani;......the entrance of air into the tympanum can be distinctly heard:......the membrana tympani is seen to be pressed slightly outwards." He therefore assumed that a *condensation* of air in the tympanic cavity ensued and remained. This inadequate method of examination proved unreliable for diagnosis, and also caused Toynbee to reject the use of the catheter in cases where, before the discovery by Politzer of a substitute, it would have proved invaluable.

Mr. Hinton says, "Mr. Toynbee's remarks

---

[*] This reminds one of a certain shah of Persia who paid his physician only when in perfact health. Directly his majesty grew ill, the physician's salary was stopped.

need slight modification." And further: "The act of swallowing, whether the nostrils be closed or not, does not increase the pressure of air in the tympanum, but diminishes it; and it is therefore the suction of air out of the tympanum, not the forcing of air into it, which is heard through the otoscope during that act. This has been proved by Politzer, by means of the introduction of a small manometer, air-tight, into the meatus, when the colored fluid is seen to fall during swallowing; and in some not very rare cases in which there exist thinned spots in the membrane, either as scars of former perforations or as the result of superficial ulcerations, the effect of swallowing may be plainly seen; the thinner portions visibly falling inwards during swallowing, especially when the nose is closed, and bulging when the ear is inflated."

Mr. Hinton apparently adopted Dr. Schwartze's quotation from Politzer's *brochure*, in the "Vienna Medical Review" of 1862, rather than his more recent series of observations contained in "Die Beleuchtungsbilder des Trommelfells" (Wien., 1865, p. 138). Politzer there, as I read it, makes no allusion to the test *with nostrils unclosed*, but says: "An erroneous supposition has arisen that during the act of swallowing with nasal cavities closed, air was passed into the tympanic cavity. By a manometer, which is provided with a little drop of colored fluid, placed air-tight in the meatus, an air-rarefaction may be proved. We must, however, review our experience in this matter, inasmuch as, correctly speaking, it is only in the first moment of the act of swallowing that a slight air-condensation ensues in the tympanic cavity; in the further course, however, a considerable rarefaction." He then proceeds, almost in the same words as above quoted from Mr. Hinton's supplement, to endeavor to establish this hypothesis, by reference to the evidences afforded when the membrane is morbidly affected.

Dr. Jago, two years before Toynbee's publication, called attention to "the visible depression of the lachrymal sac as manifesting that air is withdrawn during the act of swallowing with nose closed."

I have noted down these different contributions to the subject under consideration, because they contain all the information that I can gather from writers on aural physiology, and not from the mere desire to criticise or controvert their opinions.

Those who are in the habit of investigating ear disease will not fail to see that much practical importance attaches to researches which have for their object to elucidate the functions of those parts that not only receive and regulate, but propagate every variety of sound to the auditory nerve. The membrana tympani and ossicular chain will be shown to be the analogues in function of the iris, which regulates the admission of light to the optic nerve. The structure and offices of the iris have been most elaborately investigated and described, and ophthalmic surgery correspondingly benefited. Observations, however, on the analogous parts in the ear, which effect even more for hearing than the iris for sight, cannot be said to have attained any such exactitude, and consequently cannot afford similar assistance to aural surgery. At the risk even of prolixity, I may be excused for making an honest attempt to explain the mechanism whereby relaxation and tension of the membrana tympani are effected; these actions being strictly analogous to dilatation and contraction. Air-condensation in the tympanum, causing relaxation of its membrane, answers to dilatation of the pupillary margin of the iris; and air-rarefaction, causing tension of the membrane, answers to contraction of the pupil. Should not, therefore, important functions performed by parts in the ear, which are analogous to, and obviously as much concerned in surgical manipulations as, those in the eye, obtain equal attention?

I subjoin what I conceive to be a correct explanation of the changes which take place in the tympanum and its membrane when certain acts are performed, whether for the purpose of diagnosis or experiment.

1. *In swallowing.*—The Eustachian tubes, usually closed, are now opened; and during the short time that they remain open, the air in the tympanum is continuous with that in the nasal cavities; but being nowhere unduly pressed upon, that column which has been detained in the fauces passes out of the nostrils as soon as the palate muscles return to rest, and not into the Eustachian tubes. I cannot detect any motion of the membrana tympani, when inspected by the best illuminating power; nor is the fluid in my manometer in the slightest degree affected. If, however, an unusually dense external air has passed the tympanic membrane inwards, or, conversely, a rarefied air has drawn it outwards, then the act of swallowing, in restoring equilibrium, will move the membrana tympani. The former condition occurs when we descend in a diving bell or into a coal mine, and the latter in crossing high mountains.

Schwartze and Lucae have attempted to show that, not only in swallowing, but in ordinary respiration, movement of the membrane takes place; but Politzer designates such a view simply as "error," and conclusively proves that it is only in certain morbid states, as in cicatrices, collapses, thinnings, healed perforations, &c. (where I conjecture that there has been loss of elastic fibre), any perceptible motion ensues. Neither Politzer nor I can therefore concur in my friend Mr. Hinton's physiology as above quoted, where he leads us to infer that an ordinary act of swallowing diminishes the pressure of air in the tympanum.

2. *Swallowing with nostrils closed.*—In this case, effects are produced upon the membrane wholly different from those just noticed. While the Eustachian tubes are patent, the faucial air, being prevented from escaping through the nose, is pressed into the tympanitic cavity with sufficient force to overcome the resistance offered by the tensor tympani muscle and ligament, and the fibrous structure of the membrane. The latter is, in consequence, quickly pushed *outwards.* Before, however, the muscles which have opened the Eustachian tube return to their state of rest, the membrana tympani, by its own inherent elasticity, aided by its tensor muscle, springs back to its position, even a little further inwards than before. The manometer having been placed in the meatus, it is seen that, in the first part of the act, a rapid but *considerable condensation* occurs, and a corresponding rise of the fluid. Secondly, and as rapidly, a *slight rarefaction*, as is made

evident by a fall of the fluid to somewhat below the point at which it stood before the experiment. If a swallowing movement, or any of those other movements previously specified, be now made with nostrils *un*closed, equilibrium will be restored, as will be proved by the fluid returning to its usual position.

On a comparison of these results with those obtained by Politzer, a want of agreement will be perceived; but the inefficiency of the instrument made use of by this generally most accurate observer fully accounts for the mistake into which (as I think) he has fallen in this instance.

The next paper of this series, devoted to sound-conduction, will contain illustrative engravings of my manometer, and of some parts of the tympanum.

(To be continued.)

CASES OF TETANUS.

By James More, M.D.

Case 1. *Traumatic tetanus.*—On April the 14th, 1863, John M——, aged thirty-six, a strong, muscular laborer, received a compound, comminuted fracture of the big toe. As the external wound was small, I endeavored to save the toe; but ere many days had passed, profuse suppuration set in, with certain symptoms indicating tetanus, and I was obliged to amputate.

April 30th.—During the first day or two after receipt of the injury, and before amputation, the patient complained of great pain in the foot—a pain similar to but more intense than cramp,—with stiffness at the angles of the jaws, and a frequent desire to swallow, but difficulty in so doing. Between the dates 14th and 30th this stiffness developed itself into severe spasms, the muscles of expression, of respiration, and deglutition being in turn affected. The stump now looks well, and appears healthy in every respect. Ordered him to have one-drachm doses of Indian hemp every three hours, and a turpentine injection at bedtime.

May 4th.—He has passed the last two or three days in a state of great misery. In spite of large doses of Indian hemp, the tetanic spasms have been gradually increasing. At first, individual muscles, or sets of muscles, seemed to be affected; but now the whole sy tem appears in a state of motor tension. The spasmodic attacks come and go every ten minutes, and are very severe in the respiratory and abdominal muscles; but so intense is the *general* tetanic tension over the body, that severe spasms can be induced at any time, and at any place, by simply placing the hand on any particular part; and, indeed, the slightest movement on the part of the patient, or noise caused by any one moving through the bedroom, is sure to induce an attack. The expression of his face is wild and sardonic, and he seems to shudder with dread lest any one should touch or speak to him. Within the last day or two his face has assumed the appearance of great age; the expression is indeed truly horrible, and indicates absolute despair. The Indian hemp did good at first, but latterly lost its effect, unless the amount was increased at each dose. He took as much as three drachms at once, but even this failed to relieve or reduce the force of the spasms. Ordered him two grains of opium powder every four hours, and, as his pulse seems getting weaker, eight ounces of wine daily.

May 12th to 26th.—The patient has gone through a dreadful series of spasms; but now, thanks to the opium, with the turpentine by injection and internally, he seems somewhat better. The spasms are not so intense, nor are they so easily excited; and the secretions are more natural in color and quantity. The wine appears to have been of manifest use in not only supporting the general strength, but in reducing the terrible force of the tetanic attacks.

June 3d.—My patient is now improving rapidly, though the spasms still occur in a slight form and at long intervals. He is gaining flesh and strength, his only complaint being a soreness and stiffness in the muscles that were chiefly affected. The stump is quite healed up, and he can walk about without lameness.

Case 2. *Traumatic tetanus.*—Robert N—— came to me on the 12th of July, on account of a lacerated wound he had received on the first joint of the forefinger. On examination, I found the wound almost healed up, and looking well in every respect; but the patient was anxious about it, as he believed he was taking lock-jaw. His jaw *was* very stiff; so much so, indeed, that it was with difficulty he could introduce his finger between his teeth. He also complained of great pain at the back of his head and neck, with pain and stiffness at the angles of the jaw. I found he was then under the influence of mercury, which he accounted for by telling me he had taken some calomel powders, under the idea that his liver was out of order. Taking all the symptoms into consideration, I had not the slightest doubt tetanus was approaching. Ordered him half a grain of morphia, every four hours in pill, a mixture of iodide of potassium to check the salivation, which was severe, and, as his bowels were confined, a full dose of Harrogate salts.

July 14th.—To-day the jaws are in much the same state, and he now also complains of intense pain over the end of the sternum. The pulse 100, and very irregular both as to volume and frequency; the skin hot, and at times bathed in profuse perspiration.

17th.—The pain over the sternum increasing, the jaws now quite locked, the expression of the face much changed, and constant jerking and twitching of the muscles. Added three grains of extract of belladonna to the morphia pill, and applied a belladonna plaster along the spine.

19th.—Much worse; the tetanic spasms rather more general, being now in the muscles of the back, the abdomen, and the extensors of the lower extremities. Those in the abdominal wall are very constant and painful, occurring every ten minutes, the affected part feeling to the touch like a hard board. The pulse much the same in its irregularity, but weaker.

21st.—Complains of dryness of the mouth, intense thirst, profuse sweating, and want of sleep.

23d.—The spasms now general over the body. He has not slept nor had his bowels moved for four days. Administered an enema of turpentine and castor oil, which brought away a great quantity of dark, offensive matter. The recti muscles seemed to be in a state of extreme tension, but after rubbing with chloroform liniment and laudanum the spasm relaxed somewhat; indeed, after a thorough inunction with the liniment, the whole abdominal wall seemed softer and more flaccid. The pulse 130, weak, and thrills under the finger; urine normal. Ordered a suppository of two grains of morphia at bedtime.

24th.—Somewhat better this morning. Has had some sleep, and found great comfort from a turpentine injection. The spasms occur now only every half-hour, and are not so painful. He is now taking a tablespoonful of wine every three hours, and his pulse is more regular, stronger, and softer. Altogether he seems in a more hopeful state.

25th.—Last night the patient had three hours' sleep, and there has been only one spasmodic attack this morning, which, as usual, was followed by profuse sweating. The muscles of the jaw are now quite free from tetanic tension, but those along each side of the spinal column are still affected, being hard to the touch and very painful. Ordered an increase in the stimulants, with his nourishing soup as before. As the bowels have not yet moved naturally, I ordered him to have the turpentine injection every night at bedtime; this evidently gives him great relief, as it invariably brings away large, dark, offensive stools.

29th.—The patient is improving gradually, if not rapidly. He sleeps more, takes his food with relish, and his bowels now act without help. His great complaint is a painful and weak state of the muscles, which have been spasmodically affected. Some of these, especially the extensors of the thigh and the recti muscles, seem to the touch as if they had been torn or broken across, and in some places there are dark-bluish marks as of ecchymosis.

Aug. 8th.—My patient is now out of bed, and, but for the painful state of the muscles, seems quite well. He tells me his limbs still feel so stiff that it is with great difficulty he can move them when attempting to walk. He has the same feeling when stooping; indeed, he looks as if he had not a joint in his body. This state of the muscles continued more or less up to the beginning of September, and gradually left him.

Case 3. *Traumatic tetanus.*—David M——, an old man about sixty-five years of age, while driving a mill for grinding tan-bark, had his fingers so much crushed that I was obliged to amputate the two middle fingers. This occurred on the 1st of February, and by the 10th the wound was healed. Just as the stump was closed up trismus came on, and, in spite of active treatment with Indian hemp, opium, belladonna, &c., continued for two months. The muscles of the jaw were those only affected, and though the jaws were quite locked, still, through inequality of the teeth, he was able to *suck* enough nourishment to keep him living. That it was a true case of trismus there could be no doubt, as the slightest attempt to open the mouth, induced rigid spasms in the muscles, and, on one or two occasions after smoking till he was almost sick, he could open his jaws so that he could introduce his thumb between his teeth, the spasms returning when the effects of the tobacco went off. Thinking some of the nerves might be implicated in the cicatrix, I incised the face of the stump, and by poulticing induced suppuration, but this was of no use whatever. The lock-jaw continued for two months, when the patient went to Edinburgh; but he wrote me that it gradually left him, and three months after the receipt of the injury he was quite well.

Case 4. *Idiopathic tetanus.*—James N——, aged forty-five, a farm-servant, called on me on the 18th of August, complaining of great stiffness in the back part of the neck and jaws, and "cramp" in the extensor muscles of the right leg; the latter being so severe as to render him quite lame. He attributed the above symptoms to rheumatism, brought on by great exposure to cold and wet while herding sheep. He likewise informed me that he was in very poor circumstances, being both badly fed and badly clothed. Looking upon the case as a species of rheumatism, I prescribed for him accordingly, and, as his bowels had been confined for some days, added some aperient to the mixture.

Aug. 28th.—Did not hear anything of N—— till to-day, when he sent for me to visit him, as he had been gradually getting worse since his visit at my surgery. I found all the above symptoms aggravated, and he also complained of severe pain in the chest over the sternum, and spasms in the abdominal muscles. Pulse 100, weak; skin hot, and covered with profuse perspiration; and all the usual symptoms of tetanus. I founded my diagnosis of tetanus (idiopathic, there being no wound of any kind) on the general symptoms, on the partial remission of the spasmodic attacks, and on the aggravation of these spasms from the slightest cause. By simply placing the hand on the abdomen or thigh, severe tetanic spasms were induced at once.

30th.—On my last visit I had put the patient on drachm doses of Indian hemp every three hours, with two grains of opium at bedtime, and a saline aperient, with two drachms of turpentine, when the bowels required opening. This treatment produced a good effect, but he tells me he suffers at times from a sense of suffocation. The dyspnœa is, however, not in the least urgent to-day, and the spasms are much abated. The abdominal muscles still get rigid when touched, and the pulse is weak, but falling in frequency. Ordered him to continue his remedies, and to take a small glass of wine three times daily.

Sept. 2d.—Much improved; the breathing now natural; pain at the sternum almost gone, and the muscular spasms less frequent and severe. He thinks the wine has done him more good than the medicine, and indeed he did not begin to improve till he had it. I saw him again, and need only add that he gradually improved, and, after an illness of three weeks, is now quite well.

Rothwell, Northamptonshire, 1869.

AORTIC ANEURISM.

PROBABLE CAUSE OF ITS GREAT PREVALENCE IN THE ARMY COMPARED WITH THE NAVY AND MALE POPULATION, AND CONSEQUENT REMEDY.

By A. B. R. Myers, Esq.,
Assistant-Surgeon, Coldstream Guards.

This subject has of late years much engaged my attention, owing to the number of cases that have come under my notice in the regiment to which I belong. It was brought before the notice of the Pathological Society, and having been informed afterwards by many members of its great general interest, I am now induced to express my views of it more fully through the medium of THE LANCET.

Statistics in proof of an assertion are not always, and very properly, considered convincing, and especially if prepared by one whose name attaches no weight to them. I therefore will omit as much as possible those made by myself, and will take advantage of the carefully drawn-up paper on this subject by Inspector-General Lawson, in the "Army Medical Report" for 1866. He compares the death-rate from aneurism in the army at home with that of the male population during the years 1859 to 1865 inclusive, and he finds that it is eleven times greater in the former than in the latter. Such a result, however, although sufficient for my purpose, does not at all give a fair estimate of the excess of this disease in the army, for many soldiers (about one-third of the cases) are invalided for this disease, who diminish the army average, and consequently swell that of the civil population.

No accurate comparison can be made between the deaths and invaliding for aortic aneurism in the army and navy, as the returns in the former divide the disease into "aneurism" and "aneurism of aorta," whilst in the latter all are classed under "aneurism;" but as I consider that nearly all the cases of death from this disease may be referred to the aorta (and certainly such agrees with my own personal experience during the last ten years) I will now only make an analysis of them.

Statistics of Deaths from Aneurism in the Foot Guards and Line serving at home compared with the Navy for four years.

	ARMY.		NAVY.	
Year.	Strength.	Ratio of deaths from aneurism per 1000.	Strength.	Ratio of deaths from aneurism per 1000.
1862	49,332	·28	58,870	·11
1863	44,291	·47	54,090	·05
1864	40,539	·37	53,000	·18
1865	42,228	·35	51,210	·09

The above period is chosen, as previous to 1862 "aneurism" in the navy was included under the heading "Diseases of the heart and great blood-vessels;" and I think it is amply sufficient to prove the greater mortality from this disease in the army than in the navy.

Why, then, is this disease so much more prevalent in the army than in the navy and male population? Syphilis is considered by some observers to be the main cause of the excess; and Dr. Aitken, in his "Practice of Medicine," refers seventeen out of twenty-four cases he has examined after death to this source, the evidence of the disease being "cicatricial-like loss of substance of the inner coat of the aorta" beyond the sac. Special attention has been drawn by many medical officers to this, what I would call corrugated, appearance of the aorta, and assigned to syphilis; and it is well-marked in the specimen I exhibited before the Pathological Society. There was, however, no syphilitic history, and no evidence that I could detect of any adventitious deposit in the coats of the aorta; and I attribute its production in this, as well as in most other cases, to small ruptures of the circular fibres from the prolonged over-distension of the vessel by an undue column of blood.

I have no doubt that syphilis, when thoroughly impregnated into the system, leaves no part of the body unaffected; but I think the following statements must prove that its production of aortic aneurism is much over-estimated.

1st. That the navy, with about an equal proportion of syphilitic disease, has a much smaller rate of aneurism, although the sudden violent exertions sailors have to undergo must tend towards the promotion of this disease.

2nd. That aneurism is a disease almost unknown amongst prostitutes, whilst, on the other hand, they are frequently affected with syphilis in its worst form.

Mechanical obstruction to the circulation is, then, in my opinion, the chief cause of this disease in the army, and is produced as follows:—

When the peasant leaves the plough and becomes a soldier, two great changes at least are gradually effected in him—viz., his limbs from being stiff are rendered supple, and his chest, which *had* nothing to restrict its movements, becomes a partially fixed, though to some an imposing-looking structure. By some experiments I have made with the spirometer, I find that men standing at "attention" with their tunics buttoned up, without their arms and accoutrements, suffer a loss of about twenty cubic inches on forcible expiration, the upper thorax remaining expanded, and consequently, also, the upper lobes of the lungs; whilst the diaphragm and lower lobes are brought into special requisition. Such a condition must surely impede the passage of the blood from the main trunk to its thoracic branches. I may say here that I consider this prolonged over-distension of the air-cells of the upper lobes may weaken their elasticity, and tend to the production of tubercular disease; and this, if I mistake not, is the opinion of Dr. Quain.

The next and main cause of mechanical obstruction is due, I think, to the manner in which the tunic is fitted round the neck; neatness being the great point studied, although, no doubt, it is tried to combine this with some comfort. Such, however, is hardly possible according to the present pattern; for the collar, fastened by one large hook, must be made to fit tightly, so that the cloth shall sit smoothly beyond it, and the amount of freedom is tested when the soldier is standing still.

How easily this will explain the frequency of faintness in the ranks after a little extra exertion. In illustration of this, I once measured the neck and tunic-collar with fastening of a private whilst standing at ease a few hours after he had fainted in the ranks. The former measured 15¾ in., and the latter 16 in. without making any allowance for the stock and the inward curvature of the hook, which comes always a little above the upper margin of the sternum. This constriction round the neck, though possibly not felt when the soldier is at rest, must be a great check to the circulation when he is using any exertion; and with the increased action of the heart at the time, the aorta must become dilated beyond its normal limits, its elastic fibres weakened, if not ruptured, and aneurism be the not improbable result.

I trust I have expressed myself clearly, as I think the subject has such special interest now whilst the greater freedom of the chest is being so carefully studied in connexion with the knapsack; but should some still dissent from my views, I will add a few statements that bear closely upon them.

Inspector-General Lawson draws attention to the special prevalence of disease of the heart and great bloodvessels amongst the troops at the Cape; but he does not offer any explanation of it. I am informed, however, that they have to endure very great fatigue in long marches over hilly districts. He also points out the great increase in the deaths from the above throughout the army of late years.

I would suggest that this might be attributable to the great alteration in the collar in 1855. The old high stiff collar, with its three hooks and stock, upon which the point of the chin rested as in a vise, though most uncomfortable, fitted of necessity loosely round the neck, and, in fact, was only an exaggeration of the present comfortable collar of the Prussian army; and old soldiers whom I have asked, state that the pressure round the lower part of the neck was not so great in those days as it is now.

In 1856, the 52nd Regiment, stationed in India, received the new tunic as at present worn; but the colonel, considering that the pattern of collar was objectionable, had it much enlarged at his own expense, and made to fasten with three hooks. This was worn in the regiment for eight years—namely, until its return to England; and it was universally liked by the men, one of whom, now a non-commissioned officer of the Coldstream Guards, has given me this information.

On examining the annual statistics and manuscript reports of the regiment, I find no instance of invaliding or death from aneurism throughout that period, the average annual strength having been 839.

With these facts before me, I feel convinced that the amount of aortic aneurism in the army may be much diminished by the tunic being fitted more loosely round the neck and upper portion of the chest; nor can I see the propriety of making any portion of the soldier's dress so tight as to place him at a great disadvantage in regard to health, comfort, and usefulness when actively employed, and especially now that the capabilities of each individual are being so much more studied than formerly.

In conclusion, I may state that I have avoided for the present the subject of heart disease, so prevalent in the army, fearing the too great length of this paper, although it must be most intimately associated with the one herein commented upon.

◆

ON THE OCCURRENCE OF

RELAPSING FEVER AMONG THE POLISH JEWS ADMITTED INTO THE GERMAN HOSPITAL IN LONDON.

By Hermann Weber, M.D., F.R.C.P.,
Physician to the German Hospital.

As relapsing fever has not occurred in an epidemic form either in London or in any other part of England since 1855, it will probably be interesting to epidemiologists to learn that seven cases of this disease have been admitted into the German Hospital since the beginning of September, 1868. A short description of one of the last cases will show that the disease in question is true relapsing fever.

K. B——, aged seventeen, a native of Prussian Poland (district of Bromberg), had arrived in England scarcely a month, and had resided in High-street, Shoreditch, when he was suddenly seized, on the evening of Dec. 19th, 1868, with headache, sense of prostration, and rigor, which symptoms were followed by giddiness, pain in all the limbs, sleeplessness, want of appetite, nausea, and great thirst, and continued up to the patient's admission into the German Hospital on Dec. 21st. When I saw him, soon after admission, together with the senior resident medical officer, Dr. Port, to whom I am greatly indebted for the careful reports of all the cases, the following condition was found:—The patient was not emaciated, the face pale, with the expression of serious illness, but rather of great prostration and suffering than of the stupor of either typhus or typhoid fever; eyes not congested; tongue moist but inclined to become dry in the centre, with a slight whitish fur; strong fœtor oris, and a peculiar, most disagreeable smell of the body;[*] total want of appetite; great thirst; bowels not constipated; abdomen natural; spleen just perceptibly enlarged; perfect absence of chest symptoms; urine acid, free from albumen; violent headache from the back to the front; pain in all the limbs, with soreness and tenderness to the touch; giddiness; sleeplessness; skin hot and dry, without any trace of eruption. Temperature in axilla (4 P.M.) 103·4° F.; pulse 102; respiration 24. The treatment consisted of rest in bed, a pint and a half of beef-tea, a pint of milk, and cold water *ad libitum*.

Dec. 22d (fourth day).—Headache increased: four thin motions.—9 A.M.: Temperature 104·2°, pulse 104, respiration 24.—6 P.M.: Temperature 104·0°, pulse 104, respiration 28.

23d.—The same complaints: herpes labialis.—9 A.M.; Temperature 103°, pulse 104, respiration 26.—7 P.M.: Temperature 103·6°, pulse 108, respiration 28.

24th.—First part of night restless; towards morning sleep; on waking, profuse perspiration, feeling of exhaustion, but disappearance of pain.—9 A.M.: Temperature 98°, pulse 62, respiration 20.

From Dec. 24th the patient gained strength; he remained almost free from pain and seemed convalescent; the pulse and temperature were less than normal, and the spleen was rather large, when on Jan. 1st, 1869—namely, the fourteenth day from the beginning of the illness, and the ninth from the end of the first attack—K. B—— said that he had not slept well, and that he had some headache. The spleen was found to be large—much larger, in fact, than during the first attack, being now felt fully an inch below the ribs. At 9 A.M., pulse 84, respiration 24, temperature 101·2°; at 11 A.M. the temperature was 102 8°; at 2 P.M., 103·4°;

---

[*] This smell was present during all the three febrile attacks of this patient; most so, however, in the first, less in the second, and least in the third attack; it was entirely absent during the intervals. The nursing sister repeatedly directed my attention to this smell; it was not perceived in the other cases.

at 4 P.M., 103·6°; at 6 P.M., 104·4°; at 9 P.M., 103.9°.

Jan. 2d (second day of relapse).—Sensation of coldness in the back; pain and soreness in the limbs; headache; sleeplessness; whiteness of tongue; tendency to diarrhœa. From 9 A.M to 9 P.M. the temperature ranged from 103·6° to 104·6°, the pulse from 100 to 120, and the respiration from 20 to 28; the highest figure in each being reached at 5 P.M.

3d.—Headache diminished, tendency to diarrhœa continues; urine scanty and albuminons. At 9 A.M., the pulse was 120, respiration 22, and the temperature 103·9°, which rose to 105·6° at 6 P.M.

4th (fourth day of relapse, seventeenth from beginning).—After a very restless night, profuse perspiration commenced early in the morning. At 9 A.M., the temperature was 96°, the pulse 60, and the respiration 16. The perspiration continued throughout the day, the pulse remaining weak and slow, and the temperature below 96·5°; the spleen very large; urine rather scanty, specific gravity 1025, containing a considerable amount of albumen, and forming on standing a deposit of uric-acid crystals, urates, epithelial cells, and granular casts. Blood taken from the arm did not contain an unusual proportion of white globules. The treatment during the relapse had again consisted in rest, cold water, beef-tea, and milk; and I may add, in order to allow of an undisturbed observation, the same treatment was pursued in all the cases excepting one.

After Jan. 4th the patient soon regained his appetite: the temperature and pulse remained below the average; the first sound of the heart was very long and soft; the spleen gradually diminished in size; the albumen disappeared from the urine; he was not quite free from pain in the limbs, and was rather depressed in spirits, but otherwise convalescence seemed very fairly established, when, on

Jan. 17th (viz., the thirty-first day from the beginning, and the fourteenth from the end of the second attack), K. B——, towards the evening, complained again of headache, heat, thirst, and pain in the left side of the chest and the left shoulder. The temperature had risen already in the morning from 97·6° (on the 16th) to 98·9°, and was in the evening 101·4°.

On the 18th (second day of second relapse) he had not slept well, but the night had not been so bad as in the former attacks. There was scarcely any headache, but the pain in the left shoulder continued, and there was some diarrhœa; the spleen was not much enlarged; the urine was clear, acid, and free from albumen. At 9 A.M., the temperature was 100·4°, and rose to 103·4° at 6 P.M.; pulse 100.

On the 19th the patient perspired, and the pulse and temperature were normal, or rather below the average; the pain in the left side of the chest and left shoulder had, however, not yet disappeared, and continued for some days longer, although the appetite and general health made rapid progress. There was no perceptible enlargement of the spleen during and after the third attack.

The other cases were, in the main points, similar to this, but in none of them did a third attack occur, and they were not complicated with diarrhœa. We may draw from them the following picture: The patient is almost suddenly seized with severe headache, great prostration, pain and soreness in the whole body, and usually also with rigor; the tongue is generally moist, whitish, with a slight fur; the bowels are in some cases regular, in others rather inclined to constipation, but again in others to diarrhœa; nausea and vomiting may occur at different periods of the disease, and in the severer cases a certain amount of jaundice; the spleen is rather large during the first attack, remains so during the period of intermission, and generally becomes more swollen during the second attack, and then gradually returns to its normal size; the urine is rather high-colored, with a tendency to lithic-acid deposits, and becomes sometimes albuminous, when it may contain tube-casts: the bladder occasionally loses for a time its power of contraction; the skin is hot and dry; there is no eruption excepting the occasional occurrence of herpes labialis; the face is pale, has an anxious expression of suffering, but not of the stupor of typhus or that of typhoid fever. The temperature is much increased, varying in general (in the axilla) between 102·5° and 105° Fahr., the highest point of every day falling usually between four and seven P.M., and that of the whole attack just before the crisis. The pulse is rather frequent, usually ranging between 100 and 120. The first sound of the heart is sometimes much protracted, so as to approach in character a soft bruit, which peculiarity disappears during convalescence, and resembles the indistinct bruit frequently observed in anæmic conditions. The respiratory movements are accelerated in proportion to the degree of pyrexia; the catarrhal affections of the air-passages, so general in typhus and typhoid fevers, are usually absent. The action of the brain is but little affected, but sleeplessness is general. The senses are free. On about the fifth day from the commencement a rapid change takes place, the symptoms of pyrexia disappear in the course of a few hours (sometimes with a marked collapse); the frequency of the pulse may become diminished by more than one half, and the temperature may go down 10° Fahr. in less than ten hours. The skin becomes bathed in perspiration; the pain in the head and limbs usually disappears, the patient seems to have entered convalescence, when after about eight days, in the great majority of cases, more or less, but not quite suddenly, a second attack commences, with symptoms analogous to the first, but generally less severe, usually lasting from three to five days, terminating as abruptly as the former, and being followed by perfect convalescence except in rare cases, in whom a milder and shorter third (and possibly even fourth) attack may occur. The first signs of the attack usually manifest themselves towards the evening, and those of the crisis after midnight. During the convalescence there is at first a certain degree of anæmia, reminding one of the effects of ague, and the force and frequency of the pulse and the temperature of the body are less than normal.

The picture given in the concluding part of the former section of this paper is very similar to those drawn by Sir Wm. Jenner, Dr. Murchison, and older observers in this country, and by Griesinger and Hirsch in Germany. It differs, however, in a few points of minor importance.

First, with regard to the abruptness of the attack. The first attacks were also in our cases described as quite abrupt; but the second, which came on under our own observation, when the patients were watched, were by no means so abrupt as is usually assumed, but a change in the general feeling, or in the aspect of the patient, a less good night, or a slight and gradual rise of the temperature, preceded the outbreak. There can be little doubt that the first attack, too, does not occur as abruptly as is generally described, but is preceded by morbid symptoms which escape the attention of the patient. Scarlet fever, pneumonia, and typhus are likewise commonly described as commencing quite suddenly; but whenever I have had the opportunity of witnessing their development, the rise of symptoms was not abrupt, though they have, in common with relapsing fever, a steeper road of ascent than many other diseases.

The frequency of the pulse, in our cases, varied mostly between 100 and 120, and was in proportion to the other symptoms of pyrexia; while Dr. Murchison* draws special attention to the proportionally much greater frequency of pulse in this disease than in typhus. The youth and comparatively good condition of our patients account, probably, for this difference.

The tendency to constipation was less marked in our patients, and the opposite even took place in the case previously described in each of the three attacks. Vomiting occurred only in two out of the seven cases; and jaundice in only one. The enlargement of the liver was no prominent feature with us. The spleen, however, was invariably enlarged, and this much more so during the second attack than during the first. After recovery from the second attack it decreased rather rapidly, and did not much increase during the third attack in the only case where this occurred.

With regard to the number of attacks in the seven cases, there were three in one; two perfect attacks in four; a very short second in one; and no second at all in one.

Retention of urine from inaction of the bladder occurred in one case.

I am sorry I can add but very little to our as yet imperfect knowledge of the *urine*. Dr. Parkes† and Dr. Murchison‡ mention that albumen has been rarely found, while it was present in two of our seven cases. In one of them the quantity was rather large towards the end of the second attack, and accompanied by the presence of many granular casts; the urine was of high specific gravity (1025), and deposited lithates and lithic acid in crystals; the albumen and casts disappeared within four days from the cessation of the pyrexia. Considering the high degree of pyrexia usually attending relapsing fever, it is probable that albumen is more frequently present than is generally assumed.

In an epidemiological point of view it is important to bear in mind that relapsing fever is not prevalent in either London or any part of England, Scotland, or Ireland. Dr. Murchison kindly informed me, only a few days ago, that there have not been any cases of relapsing fever in the London Fever Hospital for fourteen years, excepting three doubtful cases in the course of last autumn. The first and second of these three cases were those of a Polish Jew and his wife, who were admitted last autumn in a state of great prostration; had no fever when they were examined at the hospital, but had had an attack of illness before admission. As they could not be induced to remain in the hospital, there was no chance of watching for a relapse. The third case was that of an Irish girl coming from Whitechapel, in whom the symptoms resembled those of relapsing fever, but in whom there occurred, if I remember aright, no relapse. Mr. Simon likewise is not aware of the existence at present of relapsing fever in England. It is further important to remark that all our patients were natives of either Russian or Prussian Poland, and that they all belonged to the Jewish persuasion. The first case occurred in the beginning of September, and was recognized as such by Dr. Bäumler, who saw my patients during my absence; the next, a patient of Dr. Sutro's, was admitted in November, and five more since then. Two of the patients mentioned that they came from 20 Castle-street, Whitechapel; and another (Dr. Sutro's case), who, unfortunately, gave his address indistinctly, stated that his was the fourth case of the same illness in the same house; but whether the other three cases were really relapsing fever or not, could not be made out. Two of the cases had resided from only a few days to four weeks in this country; the other cases from one to several years. They were not particularly ill nourished when attacked. Their ages varied from seven to twenty-eight years. Six were male, one a female.

To Professor Hirsch of Berlin, as well as to Dr. Murchison and Dr. Mackower of Wiesbaden, I owe the information that relapsing fever is prevalent in various parts of Prussia and Russian Poland, and in different districts of eastern Prussia. Professor Hirsch especially states that in several places, as Berlin and Königsberg, it is quite clear that the disease has been imported; and, further, that the cases lately admitted into the Clinical Hospital of Königsberg consisted entirely of Jews immigrated from Poland and Russia.

It will be a point of great interest to watch whether, in London, the disease will remain confined to the Polish Jews and to a limited district only, or whether the cases before us will form the beginning of a more general epidemic. The mildness of the weather, by which out-of-door work has not been stopped, and by which crowding together in confined rooms has been rendered unnecessary, may partly account for the slight spreading of the disease up to this time. The principal cause why the disease has, as far as we know, been confined to the Polish Jews, who must be regarded in the present instance as the importers, is probably to be found in the fact that they have but little intercourse with other portions of the population, owing partly to their religious persuasion, partly to the peculiarity of their dialect, which is almost equally incomprehensible to English and Germans, and perhaps also to a certain feeling of distrust in their neighbors whom they do not understand, and by whom they are not understood.

Grosvenor-street, February, 1869.

---

[*] A Treatise on the Continued Fevers of Great Britain (1862), p. 333.

[†] The Composition of the Urine (1860), p. 260.

[‡] Loc. cit., p. 345.

ON THE SUBCUTANEOUS SECTION OF BOILS AND CARBUNCLES.

BY JOHN GEORGE FRENCH, F.R.C.S.,
Surgeon to the Infirmary of St. James, Westminster.

I have been much interested in the perusal of the clinical lecture of Mr. Paget on the Natural History of Carbuncle, published in THE LANCET; and, having been a severe student of this subject, I am able to recognise the truthfulness of the description given of it.

But in the objections raised to the active surgical interference in the treatment—for which, as far as the subcutaneous section is concerned, I deem myself responsible,—Mr. Paget uses the following argument: "Nay, in some cases, carbuncles completely abort."

The whole philosophy of the subcutaneous section is involved in this suggestion; and is contained in the following aphorism:—The complete division of the indurated tissue *always* causes the abortion of carbuncle. This, of course, implies *early* interference; for the term "abortion" can hardly apply to an advanced development.

Those who wish to compare the relative value of the natural course of the disease with that of subcutaneous section, may select for the former observation patients whose time is unimportant; and for the latter, those having important business or social engagements to fulfil, in which time is an essential element.

In studying the course of the disease, I have been in the habit of dotting the boundary line of redness with ink or color, to show me the exact extent and direction of any spreading of the inflammation. By this means I am convinced, after numerous trials, that, where the subcutaneous section has been made, inflammation does not extend in the direction of the knife.

Mr. Paget speaks of the mortality of the disease as probably representing two per cent., although regarded by the profession generally as far more dangerous. I am quite sure that the cases in St. James's Infirmary have far exceeded 200 during the last thirty-eight years, and the mortality has been only two; but there was this peculiarity in both cases, which involves a point of great interest and importance—namely, that the disease occurred on the anterior surface of the body. In one, a male, the carbuncle was in front of the neck, extending on either side beyond the ear; and, when the slough separated, the bloodvessels were revealed to sight as well as the denuded muscles. In the other, a female, the carbuncle was on the abdomen, with extensive diffuse erysipelas. This case was not brought to notice until shortly before death, the patient concealing her malady, and unwillingly complaining. It would be interesting to know if any of the four fatal cases recorded by Mr. Paget were on the anterior surface of the body.

I have certainly regarded carbuncles on the anterior aspect as being attended with more danger than those on the posterior surface, and have had in my infirmary during the last year two cases in the front of the thigh, both in males, entailing danger by their proximity to the large bloodvessels. They both recovered.

In speaking of treatment Mr. Paget attaches due importance to cleanliness and "keeping the surface of the skin adjacent to the carbuncle perfectly dry and free from any contact with the discharge, which seems really to have the power of infecting the neighboring skin, and so producing the boils which are apt to arise sometimes in clusters around the carbuncle." To avert this evil, I have, most successfully, used cotton wool instead of poultice.

I am also quite sure Mr. Paget is right in reference to the diet which he recommends, of which the following may serve as an example:—

T. O——, aged eighty, an inmate of St. James's Workhouse, twelve years ago had a carbuncle, for which he was attended by Mr. Bowman, of Dalston; and, being then in easy circumstances, he was recommended to take a bottle of port wine daily; this he did for six weeks, the time which it took to heal. Last year he was admitted into the infirmary with a carbuncle, the induration being about the size of an egg; this was divided subcutaneously, and upon the ordinary infirmary diet he was quite well in a little more than a week.

Great Marlborough-street, Jan. 1869.

ON A CASE OF POST-PARTUM HÆMORRHAGE.

BY F. E. WILKINSON, M.D.

The following case may be of some interest as introducing a new mode of arresting uterine hæmorrhage. In the year 1860, I was called upon to attend Mrs. G——, an hæmorrhagic patient (a lady of the middle class), in her first confinement. Parturition was tedious, both from the length of time occupied, in consequence of the insufficiency of the uterine action, and from the occurrence of persistent vomiting; and delivery was accomplished with the aid of the forceps. The placenta was expelled by the natural efforts some twenty minutes after, but the uterus contracted feebly, and shortly afterwards severe hæmorrhage took place. I was here ably assisted by my son, Dr. G. F. E. Wilkinson, then a student of medicine, and with his aid ergot and food and stimulants were administered, and cold injections thrown up, but with no success; slight contraction taking place, but the uterus then becoming perfectly flaccid. Hæmorrhage continued, and the patient became rapidly depressed. The pulse at the wrist was almost imperceptible, and there appeared every reason to apprehend immediate dissolution. At this trying juncture I observed a large sponge lying in the room; and as both my hands were engaged in endeavoring to control the fearful hæmorrhage, I directed that the sponge should be threaded with some strong string, and washed in cold water, when I squeezed it into as small a compass as possible, and introduced it into the uterus. Immediate contraction took place round the sponge, and after gently applying a bandage over the abdomen, and persisting in feeding for some hours with liquid food at frequent intervals, the pulse became gradually more perceptible, and the patient was rescued from a state of imminent danger. The sponge was expelled into the vagina upon the third day, and was removed by the attached string without difficulty, and the patient recovered more rapidly than could have been expected after such a loss of blood.

I have since used the same plan in several cases of uterine hæmorrhage in my own practice, and when I have been called in to assist other practitioners, and it has been attended with unvarying success. I believe the plan to be valuable (as in the case I have recorded) in some apparently hopeless cases.

No doubt the elasticity of the sponge keeps up a constant regular pressure upon the whole of the internal superficies of the uterus, whilst its spiculæ also stimulate the uterus to contract.

I have been in the habit of injecting a weak solution of carbolic acid to arrest fetor, both before and after the sponge is removed; but if it were desired to apply any other remedy, such as the solution of the perchloride of iron, &c., it could not be applied better than by injecting it into the sponge. But one great advantage of this plan of treatment is that it can do no harm.

Sydenham, Jan. 1869.

ON THE TREATMENT OF SCARLET FEVER.

By Charles T. Thompson, M.D., M.R.C.P.

A few weeks ago Dr. Budd published an able paper on Scarlet Fever, and as he and I obtain similar results, though by different means, I am desirous of submitting a few observations on the subject.

Instead of waiting till the third or fourth day to anoint the patient's body with oil, and to repeat this twice daily, in order to retain *in situ* the infectious excreta from the skin, and after a longer or shorter interval washing this off in a warm bath, my practice is as follows:—

On the very first access of the fever, I put my patient into a warm bath, and repeat this as often as the strength of the patient will allow or the severity of the attack may require. The first effect of this treatment is to produce a soothing and refreshing feeling in the patient, to be followed soon by such an eruption on the surface, of so vivid a color and in such amount, as would astonish those who have never witnessed it. Thus one of the greatest dangers of this fearful disease—the suppression of the eruption—is escaped.

After the first or second bath the appetite usually returns, so by getting down light and nutritious food the means are afforded of supporting the strength of the patient during one of the most trying periods of the disease. By this treatment the excreta from the skin are removed as rapidly as they are deposited, doing away immediately with the source of infection, leaving no room for the dissemination of the disease. The desquamation of the cuticle is greatly promoted, it being removed in small particles, and never in large pieces.

The drying of the body after the bath is effected by soft linen cloths, sufficiently large to envelop the whole person, and with as little friction as possible; in fact, the surface is what may be called "dabbed" dry, as the excitement from friction of the skin often produces great mischief.

The irritation of internal organs is also at once relieved by this continued determination to the surface. And as the condition of the latter becomes more healthy, the nasal, renal, and alvine secretions, with those of the throat,—in my opinion the most dangerous of all,—are speedily deprived of their noxious properties, and quickly recover a healthy character, thus again removing additional sources of infection.

The fever rapidly subsides, and convalescence usually proceeds more or less quickly, according to the mildness or severity of the attack. Another advantage of this treatment is, that a very serious case is soon reduced to a mild one, and the patient recovers in less than half the usual time.

This practice I have pursued for more than fifteen years, during which period I have attended many cases of scarlet fever; but have never lost a single patient from this disease, nor can I call to mind at this moment any one case in which the infection has been carried from the patient to any other individual. I have had six or seven cases in a family at about one and the same time, the infection clearly traceable to schools, &c.; yet have never known the disease spread to any others in the same household. I have also attended cases where isolation was impossible, or would not be attended to, the patients having free communication with other members of the family, but where the treatment above recommended has been scrupulously carried out, no second case has arisen.

The consequence of all this is that, when the patient's health is sufficiently re-established, permission has been given to join the rest of the family; and I am satisfied that the patient might also be speedily restored to society with perfect safety. In no instance have I known any harm to arise from this permission. During the convalescence of the patient the bath, of course, may be used daily, or every other day, according to the feelings or wish of the patient; but its temperature should be gradually reduced, so as to invigorate and not exhaust, and also to enable the surface successfully to resist the alternations of heat and cold to which the patient may be exposed in moving about from place to place.

The terrible sequelæ of this formidable disease are, also, by the treatment above recommended, seldom if ever met with. No nurse or washerwoman has, to my knowledge, suffered from the performance of her avocations. Of course the necessary medicines must be administered as occasion requires.

St. George's-road, Pimlico, Feb. 1869.

CARBOLIC ACID IN THE TREATMENT OF CERTAIN DISEASES OF THE SKIN.

By W. St. John Coleman, L.R.C.P., L.R.C.S.I.,

Medical Officer of the Miltown Malbay Di pensary District.

It is in the treatment of the numerous class of skin diseases, more than any other, that the practitioner meets with the most provoking disappointments. It will be therefore not out of place to state briefly here the history of some cases treated with a new remedy, and the success which attended its application.

Early in October of last year I was consulted by Miss —— for a troublesome affection of the ears and forefinger of the left hand, which I made out to be eczema chronicum. I treated this with an ointment of white wax, hydrocyanic acid, and glycerine, and the exhibition of lime-water, and subsequently of iodide of potassium, internally. Having had, some short time previously, some wounds under my care which I treated with a lotion of carbolic acid with much satisfaction, I bethought me that the same protection which this agent affords to nature in the suppurative process in cases of wounds might equally be availed of in the healing process attempted in the altered cutis. To an eight-ounce phial of glycerine and water I added about twenty minims* of pure carbolic acid, and applied it to the ears and finger night and morning. The application exceeded my expectations, and the eruption disappeared in a week, leaving a perfectly natural surface beneath. This lady had also her right leg affected with eczema rubrum, which had become chronic some three months previous to my treating her. To this also the lotion was applied, and with perfect success.

Mrs. D—— had been treated by several physicians, myself among the number, for the most troublesome and obstinate eruption of eczema faciei I have seen. From the success which attended the application of carbolic acid in Miss ——'s case, I determined to try it in this. I did so, and with this result: that, whilst using the lotion, the face is perfectly smooth, and free from any trace of eruption; but, on its discontinuance, it invariably returns, though in a mitigated degree.

I do not know how many attempts I made to cure D. C——, aged three years, of impetigo larvalis, in which his face was completely masked, several parts of his body being also affected. I only know that I was unsuccessful, and that others were equally so. With the history of the cases related above before me, I could not do otherwise than give the carbolic acid a trial. Every bit of the scaly mask is now cleared off, and the skin, although presenting the characteristic redness, does so daily less in intensity, and is just recovering its natural softness.

I will add, as of much importance to the veterinary profession, that I have used a stronger lotion with much success in the treatment of "scab" in sheep.

Miltown Malbay, Co. Clare, Jan. 1869.

◆

CASE OF TETANUS CURED BY BROMIDE OF POTASSIUM.

By R. H. Bakewell, M.D., M.R.C.S., Eng.

On the 2nd January, 1869, I was called in to see a negress, aged about forty, living in a country village in Trinidad. I found her suffering from great pain, swelling, and tenderness of the left leg, on which there were two or three small but sloughy-looking ulcers. She was in a state of high fever. There was a very strong smell of garlic in the room, and I found that a good woman of the place had been rubbing the leg, including the sores, with a compound of garlic and oil.

I found, on inquiry, that the patient was a washerwoman, pursuing her avocation in the river, and that she had "caught cold" in the leg, which had inflamed and ulcerated. The reason why I was called was that on the previous day she had been attacked with stiffness in the jaws and inability to open them more than half an inch, and that on the morning of my visit she had had a violent spasm of the masseters, during which the jaws were completely clenched, with great pain. She complained, on inquiry, of pain in the back.

I ordered the immediate application of warm poultices and emollient fomentations to the leg; that beef-tea should be given every three hours, and half a drachm of bromide of potassium immediately, to be followed by a similar dose every four hours.

On my visit in the evening I found her in every respect better: the trismus had entirely disappeared, and she could open her mouth to its fullest extent; the pain in the back had gone, and the leg was less inflamed. As her head was somewhat giddy, and she had taken a drachm of the bromide, I ordered it to be discontinued; the other parts of the treatment as before.

She continued daily to improve; there was never any return of the lock-jaw; and she is now (Jan. 23d) quite well.

Remarks.—This case is not of much importance by itself, but it may suggest to other practitioners the use of the bromide in tetanus, if it has not already been so used. I find nothing about its employment in this disease in the biennial report of the New Sydenham Society, nor have I noticed it in any of the medical journals.

Port of Spain, Trinidad, W. I.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—Morgagni *De Sed. et Caus. Morb.* lib., iv. Prœmium.

GUY'S HOSPITAL.

A CASE OF DOUBLE POPLITEAL ANEURISM.

(Under the care of Mr. Birkett.)

The patient, whose interesting case we are about to describe, was the subject of aneurism of the left and right popliteal arteries. On both sides the disease was cured by mechanical pressure. As the case offers many remarkable features worthy the attention of the surgical pathologist, we shall enter upon its details at some length.

---

* I have since used it stronger.

In the first place, the age of the patient is noteworthy. Comparatively a young man, in the prime of manhood, he had doubtless led an active life in the pursuance of his military duties, during which time he may have laid the foundation of the disease for the cure of which he came under treatment; but the man appeared in every other respect extremely healthy.

The first aneurismal tumor was of recent formation, and seemed to consist almost entirely of fluid blood; that is to say, the fibrinous deposit lining the sac was in very small quantity. The swelling had been observed one month only. Under these local conditions, it required mechanical pressure to be continued ten days before the circulation through the sac was arrested.

It is a striking fact that the *right* popliteal artery should have taken on morbid action during the period of repose enjoined for the treatment of the *left* aneurism. The dilated state of the vessel which alone existed was, however, controlled by treatment, although, as soon as the man gave way to exertion, the coats of the vessel were unable to resist the pressure of the blood-current. For *eighteen months* he neglected the treatment of this disease. During those months the ordinary changes in the contents of the sac occurred, much fibrin became deposited, and a thick-walled sac existed at the second admission into the hospital, the very reverse of that observed on the left side.

Under such local conditions, with carefully employed mechanical pressure, assiduously superintended by the dresser, Mr. H. G. Turner, the disease was cured in seven hours. In this instance the current of blood was completely arrested.

Aneurism of both popliteal arteries cured by compression of the femoral; the left in ten days, the right in seven hours.—This man, aged thirty-four years, a laborer, formerly a soldier for nearly ten years—infantry seven years, cavalry three years,—nine years and three months of which time he passed in Indian service, from the age of nine years and nine months, was admitted on two occasions into Lazarus ward.

The first time was in January, 1867. For three months, or rather more, his attention had been drawn to the left leg—at first by suddenly feeling a sharp pain in the calf of the leg whilst walking. He had not been occupied with any particularly laborious work at the time. Only one month before admission he observed a small swelling in the centre of the popliteal space; his leg and ankle began to swell at the same time, and they have remained so more or less, to this moment.

When admitted, an aneurismal tumor was readily recognizable in the left popliteal space. Its size was much diminished when the current of blood through the femoral artery was arrested. The sac contained very little fibrin. Pulsation in the tibial arteries was normal. Pain is continuous behind the knee, extending into the calf of the leg; but it is not increased when ascending or descending ladders during his work. His general health has been good; it continues so, and he looks very healthy. The action of the heart is irregular; but Dr. Moxon reported that there was nothing abnormal either in respect of sound or impulse.

Jan. 10th.—Pressure by means of a suitable tourniquet was applied on the femoral artery. Little progress was made towards cure in five days, although the pressure was well sustained and almost without intermission; but some blood certainly passed through the sac.

During the following five days the tumor became gradually harder and smaller; and after eleven days' use, no pulsation having been felt for twenty-four hours, the instrument was taken off. Thus the circulation through the aneurism was arrested by methodical pressure in ten days. Three days afterwards the tumor was hard, about two inches in diameter, and not in the slightest degree painful. In three weeks' time he left the hospital.

Before quitting the ward the patient called Mr. Birkett's attention to the right popliteal artery, which, he thought, "beat harder" than usual. After careful examination, however, it appeared to be only slightly dilated. A tourniquet was applied on the right femoral for three days, and as the dilatation subsided he left the hospital.

On August 3d, 1868, he again applied to be admitted. This was eighteen months after the cure of the left aneurism. There was now a large aneurismal tumor in the right popliteal region. He stated that soon after leaving the hospital in February, 1867, he again felt the swelling there, but that he had ever since pursued his ordinary occupations. The tumor was very large; the sac was but partially emptied by pressure on the femoral; and there was more fibrine in this one than in the first.

He reposed in bed until August 6th, when at 1 P. M., the dresser, Mr. Henry G. Turner, applied two tourniquets, one a little below Poupart's ligament, and the other about the middle of the thigh, both on the femoral artery, the circulation through which vessel was completely arrested by the compression of one or the other. Alternate pressure was kept up with these for about half an hour at a time by Mr. Turner, who remained at the bedside of the patient until after 7 P. M. At 8 P. M. the pulsation of the tumor had ceased, but gentle pressure was continued throughout the night. The next morning there was no perceptible pulsation. Thus the aneurism was effectually cured by the above-described treatment in *seven hours*.

A hard, solid tumor, from two to three inches in diameter, partly filled up the popliteal space. It gradually decreased, and the man left the hospital well, having been this time under treatment twenty-one days.

Although eighteen months had elapsed since the cure of the left aneurism, pulsation was not perceptible in either the dorsal or posterior tibial arteries of the foot; neither was there any trace of the old sac.

CASE OF DIFFUSED CONTUSION OF THE BRAIN AND HÆMORRHAGE INTO THE ARACHNOID CAVITY, WITHOUT FRACTURE OF THE SKULL.

(Autopsy by Dr. MOXON.)

The following important case occurred recently at Guy's Hospital. The sufferer was a man aged sixty-eight, and was in Barnabas ward, under Mr. Bader's care. Iridectomy had been performed: in two days he was delirious, and remained so for eight days, when he walked out of the ward and fell down five or six steps, striking his left temple. Mr. Rendle saw him, and found a swelling on the left temple, and a slight cut there; the right eye was bruised; and there was great pain and restlessness. A pad was put on the wound, and one-third of a grain of morphia injected subcutaneously. He was much quieter after this, but cold, and apparently comatose. He afterwards rallied, and seemed better; but in a few days sank and died.

We were present at the autopsy, which was conducted by Dr. Moxon.

On inspection, the body had a senile aspect. The hair and beard were greyish-black. There was a scalp wound over the left temporal region, where an abscess had been cut into. The suppurating spot was about the size of a walnut. The cranial bones were thin, remarkably so. There was no fracture, nor indeed any sign of injury to the cranium. The dura mater had no blood on its outside, but under it there was a layer of blood-clot in the arachnoid cavity. This clot, from half to a quarter of an inch in thickness, lay upon the upper part and sides of the left hemisphere of the brain, but it did not extend into the fossæ of the base of the skull, or but a very little way into the middle fossa. Its edges were tolerably well defined. Under the point where the scalp-wound existed the clot was rather thicker and more adherent; its adhesion was everywhere greater to the dura mater than to the visceral arachnoid. There were two ounces of blood thus lying on the calvarial surface of the left hemisphere. The pia mater and subarachnoid space were quite natural and free from apparent injury; and there was no trace of bruising of the surface of the brain. But section into the brain substance showed many small blood-clots, of the size of shot and as round; they were in the white matter near the surface, were easily picked out from their beds, and had sharply defined margins so as to look like cut vessels. There was one very small ecchymosis deep in the grey matter. The left corpus striatum had two small bruises on it; the right showed a severe state of injury. There was a superficial ecchymosis, close to the ventricular surface, half an inch square and one-twelfth of an inch deep. A little deeper in the corpus striatum; but still very near the surface, was an apoplectiform extravasation, of the size of a hazel-nut. The septum lucidum was torn, on the right side especially; and the ventricular liquid was bloody. The viscera were healthy.

Dr. Moxon remarked that the case was one of importance on account of the ambiguous nature of the injuries within the skull. The lesions found were of a kind not self-evidently due to external violence. They were also of an uncommon sort. Diffused contusion of the brain without fracture is rare, and so is extensive inter-arachnoid hæmorrhage when not a part of severe local injury to the cranium and its contents. When Mr. Prescott Hewett, in his able contribution to "Holmes's System of Surgery," remarks on inter-arachnoid hæmorrhage as that most often produced in injuries to the head, Dr. Moxon thought he could only refer to such a hæmorrhage occurring together with and in consequence of fracture of the skull and severe laceration of the brain and its membranes. In these cases bleeding into the inter-arachnoid space is common enough; but his own experience led him to think that such a bleeding, without evident injury to skull or brain, is an uncommon occurrence. He had never met with it before in the course of fifty-seven inspections of fatal injuries to the head; but in his absence Mr. Howse had on one occasion found blood in the inter-arachnoid space as the only lesion in the head of a boy who had died of cerebral symptoms shortly after a blow on the head from a stone that had been thrown. On the other hand, intra-arachnoid hæmorrhage may occur spontaneously as a form of apoplexy, though this, too, is rare. Dr. Moxon had not yet met with it in seventeen inspections of apoplexy cases, but in Guy's museum there were two or three specimens which had been associated with Bright's disease. It is difficult to account for such bleeding into the arachnoid cavity without laceration of the arachnoid; the membrane itself is of so little vascularity that we are almost obliged to conclude that some little laceration of the membranes escapes observation. Still, the occurrence of such bleeding without evident breach of the membranes is beyond all doubt, and it is very important in a medico-legal point of view. If it be found in a case of death suspected to be due to violence, by any observer who meets it for the first time, he is likely to be in some perplexity when required to decide whether it is apoplectic or traumatic. *A priori* reasoning helps him not at all. The bleeding from such a surface as the arachnoid is equally as unlikly to occur through violence as spontaneously. The decision has to be grounded on the results of experience. Now, experience appears to show, from examination of specimens and reading descriptions of cases, that spontaneous intra-arachnoid hæmorrhage rarely occurs to a great extent, and generally is associated with bleeding under the arachnoid. On the other hand, extensive inter-arachnoid hæmorrhage is known to follow from blows which do not break the skull or brain; and it is necessary to notice that, when it so occurs, there are generally signs of diffused contusion of the brain deeply seated, as in the case before us. In proof of this we may find cases in Casper's "Medical Jurisprudence;" in one of which the injuries, (resulting apparently from the man having been thrown down-stairs) were curiously like those in our case—that is, there was extensive intra-arachnoid hæmorrhage, and a bean-sized extravasation of blood in the optic thalamus. In another case there was a clot in the pons, associated with intra-arachnoid hæmorrhage And generally we find, from his cases, that where intra-arachnoid hæmorrhage, without local contusion, is caused by blows on the head, there is a diffused contusion, causing deep-seated extravasations. Hence we may conclude that the co-existence of inter-arachnoid hæmorrhage, with extravasations of blood in various deep parts of the brain, is indicative of external violence, even if it does not absolutely prove it. In this particular case, Dr. Moxon was guided to the conclusion that the damage to the deep parts was from violence by three criteria. Firstly, because the position of the effusion in the thalamus was too high—that is, too near the lateral ventricles—for a spontaneous apoplexy, which nearly always occurs at the base of the thalamus, between it and the corpus striatum; whereas this effusion was close to the ventricular surface. Secondly, the size of the effusion was not great enough to explain the man's fall. Thirdly, the hæmorrhagic patch in question did not consist, as in apoplexy, mainly of pure blood, but rather of broken-up nerve-substance mixed with blood. Hence it seemed right to conclude that the bean-sized patch of hæmorrhage in the thalamus opticus had arisen from the blow on the head. And so the case had a certain value as helping to prove the important proposition—that a moderately considerable, deep-seated hæmorrhage may occur to the brain from blows on the head, while its surface and the cranium escape. On the other hand, it might be believed that the man was seized with the inter-arachnoid hæmorrhage, and that this caused his fall, and the fall caused the diffused contusion. Such a belief could not be disproved; it has in its favor the history of delirium &c. which preceded the fall. Here, however, the unaltered state of the blood shows that the bleeding did not occur long before death; whereas the delirium had existed eight days. And, further, the extent of the bleeding was too great for spontaneous apoplexy; while the association of this bleeding with diffused contusion is a condition that we must expect to meet, and must recognize as one of the characteristic results of blows on the head. Dr. Moxon hence thought that, although certainty could not be arrived at, yet we might maintain a strong opinion that all the lesions found were the results of the blow on the head; and that thus the blow had been the cause of death. It was worthy of notice, that the bleeding in the inter-arachnoid was found on the same side as the blow; whereas, as is well known, the severe bleeding from laceration of brain occurs generally on the side opposite to the injury (in blows where mass is more than velocity—such as falls, &c.) from *contre-coup*.

KING'S COLLEGE HOSPITAL.

THREE CASES OF TUMOR.

(Under the care of Sir Wm. Fergusson.)

On the 6th of February, we saw Sir William operate in three cases of tumor, each of which deserves a word of notice.

1. A young woman had noticed a hardness on the margin of the left breast for three months, which increased in size. Removed, the tumor was about the size of a walnut, but its nature was not easily to be determined. It was probably fibrous, but it looked, Sir William said, very much as axillary glands will often look when there is scirrhus of the mamma. However, he had often removed such tumors without any return of disease taking place, and it was to be hoped the present case would be equally successful.

2. A middle-aged woman, of extremely cachectic aspect, was placed upon the table next, also with a mammary tumor, but of very different character. There was a mass, the size of an infant's head, pendent from the right mammary region, and including the nipple itself. Its surface was uneven, and presented at parts the evidence of fluid contents. A slanting cut was made through the skin from above and within downwards and outwards, and then two flaps were reflected, and the tumor gradually separated and removed. In the course of the operation cysts were opened, and dark greenish-brown fluid spurted out to a great distance. The separation of the cystic tumor from the skin required time and patience, as the skin was very thin. The deep attachments of the tumor gave much less trouble, the mass almost peeling off (helped by a few strokes of the knife) from the fascia covering the pectoralis major muscle. A few vessels were secured, some by ligature and others by torsion. No skin was removed, except a narrow ring around the nipple. Sir William exhibited the mass, and pointed out that it was an unusually good specimen of a sero-cystic tumor. These cysts were probably dilated mammary ducts. It seemed that ten years or more ago this woman noticed a running of dark fluid from her nipple, and this went on until a couple of years since, when some ingenious person applied something to the nipple, which stopped the discharge, with the effect, however, of causing the tumor to increase rapidly in size.

3. A girl of twelve years was wheeled into the theatre under the influence of chloroform to have amputation of the left thigh performed. The case was a distressing one. A twelvemonth only ago this girl, previously in excellent health, and forward for her age, began to complain of pain about the head of the left tibia. In September, a swelling was noticed, which increased. Six weeks ago she was admitted into hospital, the swelling then being the size of an orange. Its increase since had been so rapid that it now presented the size of a head. Sir William said the disease was evidently medullary sarcoma, and amputation was the only chance for the child. This was performed by an antero-posterior flap over the lower third of the femur, and then a circular cutting away of muscles ere the bone was sawn through. Despite great care, the periosteum was stripped up a little way from the end of the femur; and Sir William, noticing this, took off another slice. He pointed out that such an accident was doubtless the frequent cause of necrosis in a stump, and remarked upon the singular liability to stripping of the periosteum in young children.

CASE OF ASCITES DEPENDENT ON CIRRHOSIS OF THE LIVER, TREATED BY COPAIBA.

(Under the care of Dr. Duffin.)

A short time since, Dr. Garrod called our attention, whilst going round with him, to several of his dropsical patients who were taking copaiba with the effect of largely increasing the quantity of urine passed. In the following case Dr. Duffin employed the same remedy, with results which are very gratifying.

J. W——, aged fifty-one. During his younger years he had been a marine. He had resided both in the East and West Indies and on the shores of the Black Sea, and had suffered from dysentery and jungle fever. He admitted that he had lived freely, but about four years and a half ago had been compelled to "pull up," owing to a smart attack of vomiting of blood. This had recurred two years, and again one year previous to his admission, which was on Dec. 18th, 1868. Two months prior to this, he first noticed that his belly had begun to swell, and he suffered from a dull aching pain in the region of the liver. His appetite simultaneously fell off, and his bowels became irregular. These symptoms induced him, after a fortnight, to apply as an out-patient, when a moderate amount of ascites and general anasarca was detected. He was treated with salines, the diuretics in common use, nitrous ether, squills, the acid tartrate of potash, broomtops, &c., and hydragogue aperients. The anasarca diminished slightly, but the ascites was not affected by these means. After a month he went to another hospital, where analogous remedies seem to have been employed; his belly, however, continuing to increase, he requested to be made an in-patient.

On admission, the peritoneal cavity was found to be tense with fluid, the circumference being forty-three inches and a half just above the umbilicus. In the epigastric region only, as the man lay on his back, could a clear area the size of the palm of the hand be mapped out. The superficial abdominal veins were greatly distended; the cellular tissue both of the legs and about the loins and thorax pitted on pressure, and the bases of the lungs were œdematous. The condition of the liver could not at the time be traced, but the absence of any evidence of cardiac lesion, and the freedom of the urine from albumen, pointed it out as the chief offender—the more so as there was no reason to suspect either chronic peritonitis or peritoneal cancer. The urinary secretion had fallen to ten ounces daily, and the breathing was becoming slightly oppressed. The heart's power seemed good. There had been no return of the hæmatemesis for a year.

The question then arose—Ought this man to be at once tapped, or should he be tested with some of the rarer diuretics? The breathing presenting nothing urgent, and the heart's action being of fair power, the latter course was employed. He was ordered fifteen minims of balsam of copaiba, one drachm of mucilage, and one ounce of cinnamon-water, three times daily; the following will show with what effect on the kidneys:—

Urine passed in twenty-four hours.—Dec. 18th, ten ounces; 19th, ten; 20th, ten; 21st, fourteen; 22d, twenty-four; 23d, thirty; 24th, forty-four; 25th, forty; 26th, forty-eight; 27th, thirty-six; 28th, forty; 29th, forty-eight; 30th, forty-eight; 31st, thirty (?); Jan. 1st, forty-eight; 2d, fifty-two; 3d, twenty-six (?); 4th, forty-six; 5th, forty-eight; 6th, fifty; 7th, fifty; 8th, forty-six, 9th, fifty; 10th, fifty; and so on: the average being forty-seven ounces daily till his discharge.

The first day slight nausea and purging were set up by the drug, but both these symptoms faded on the third day. On the seventh day the copaiba was increased to twenty drops thrice daily. The breathing had now become quite easy, and the œdema of the lungs was the first to disappear. By the end of the year, however, the ascitic fluid had so far diminished that it was thought advisable to apply a flannel bandage to the belly so as to keep up some pressure on the portal radicles. By the end of the first week in January the outline of the surface of the liver could be readily traced, confirming the diagnosis of cirrhosis. His appetite had, however, flagged; and it was therefore determined to reduce the amount of copaiba to a single dose of thirty drops, to be given in the early morning, and to administer some solution of strychnia, mineral acid, and calumba, through the day. The result was a marked increase of appetite, without any diminution in the diuresis; indeed, on one occasion sixty ounces of urine were voided in the twenty-four hours. On the 18th January the percussion note was absolutely clear down to the flank, and all fluctuation had ceased. The belly was now distended with tympanitis. Galvanism was therefore added to the other remedies. A few days later a transient papular rash appeared, possibly due to the copaiba, but it was disregarded. The man continued to take the remedy till his discharge on the 28th of January, up to which day he continued quite free from any return of the dropsical affection.

Dr. Duffin, in his remarks, said: The case acquires its sole value from the diuretic action of the copaiba. The uncertainty and imperfection of most of the drugs at present in use to call up the eliminative action of the kidneys render any addition to our means a great positive gain. No doubt this special action of copaiba has long been acknowledged, but it appears to have fallen into such great disuse as to be almost forgotten by many practical men. The fact that in this instance the ordinary diuretics had been tried and failed renders its effect the more significant. The great rarity with which extensive ascites completely disappears, even for a while, under any plan of treatment, further renders this a good test case. In spite of the enormous pressure of the ascitic fluid on the kidneys they resumed their activity on the third day from the exhibition of the medicine, and never faltered during its continuance. A single case naturally can only be regarded in the light of a suggestion, and in cases of cardiac dropsy Dr. Duffin admits that, though of value, copaiba has only partially responded to his expectations hitherto. The nausea it is apt to induce may become a serious objection; but he would suggest the utility of piling the drug into a single dose, administered upon an empty stomach with some aromatic water, and then treating the dyspeptic signs throughout the day.

◆

ST. MARTIN-IN-THE-FIELDS WORKHOUSE HOSPITAL.

CASES OF STRANGULATED HERNIA.

(Under the care of Mr. Skegg.)

Of the following cases, in that of R. W——, who was operated upon for hernia, the cure was greatly retarded through the patient being an imbecile, and the impossibility of making him understand the necessity for remaining perfectly quiet. In consequence of his restlessness, suppuration ensued, and for some time caused great trouble and inconvenience.

Strangulated inguinal hernia; operation; recovery.—T. M——, sixty-five years of age (not a previous subject of rupture), was seized with symptoms of strangulated bowel after receiving several kicks in the lower part of the abdomen whilst attending upon an insane man. On examination of the patient, a tense, hard swelling was found in the left inguinal region, extending into the scrotum, painful on manipulation, and attended with sickness. The taxis was carefully applied; but without success. He was then placed in a warm bath, and efforts were again made to return the intestine, but failed. An enema of soap-and-water and a dose of opium were given, and a bladder of ice applied to the part. All these measures not succeeding, the strangulation having existed twenty hours, and the man becoming prostrate, an operation was determined upon. Chloroform having been administered, an incision, three inches long, was made over the axis of the tumor, and the different layers divided down to the sac. The sac was opened, and was found to contain a large quantity of fluid, with a much congested knuckle of intestine. The internal ring was divided, and after some difficulty in returning the gut, owing to its being full of fæcal matter, this was gently squeezed into the bowel above, when the hernia, with slight pressure, returned. A pad of lint and a spica bandage were applied, and the patient placed in bed. A draught, containing half a drachm of tincture of opium, was administered.

Second day.—Passed a good night, free from pain. Diet of beef-tea and arrowroot, with three ounces of brandy.

On the fourth day after the operation an enema of thin gruel was thrown up the rectum, which caused the bowels to act. He was then allowed roast mutton and porter daily. He still continued to steadily improve: the wound at the end of a fortnight was perfectly healed, and would have been so before had it not been necessary to place a ligature on a bleeding vessel during the operation, which prevented union by the first intention.

Strangulated femoral hernia; operation; death from congestion of lungs.—E. W——, a seamstress, forty-six years of age, a poor emaciated-looking creature. On examination there was found a femoral hernia of the right side. From the history it seemed that the gut had been strangulated four-and-twenty hours. The vomiting was frequent; great abdominal tenderness, and an anxious expression of countenance. An effort was made to return the bowel, but without success. Chloroform was therefore administered, and a perpendicular incision of about three inches in extent, commencing from Poupart's ligament, was made. The parts having been dissected, the sac was opened, and found to contain a small knuckle of intestine highly congested, yet healthy. The stricture—a very tight one—was divided, the bowel returned, the edges of the wound brought together with sutures, a bandage applied, and the patient put to bed.

The fourth day after the operation a clyster of thin gruel was administered with good effect. At this date all was going on well, the wound healthy, and fast healing.

Six days after admission a great change came over the patient. She appeared gasping for breath, her face of a purplish tint, and finger-nails blue. She was evidently sinking from congestion of the lungs. She died late in the day.

No post-mortem examination was made.

Strangulated inguinal hernia; operation; recovery. — R. W——, an imbecile, aged fifty-seven, was found in bed vomiting stercoraceous matter, and with an anxious expression of countenance. Suspecting the nature of the case, Mr. Skegg turned down the bedclothes to examine the abdomen, and discovered an inguinal hernia of the left side. The taxis was carefully applied whilst in a warm bath without any favorable result; and later in the day, the man, being under chloroform, was operated upon. The sac contained intestine of a very dark hue, which, when the stricture had been divided, was returned, and the patient placed in bed.

The next day the bandage which had been put on after the completion of the operation was disarranged, the inguinal region tumefied, and it seemed as though the rupture was again down. Mr. Skegg cut the sutures, passed his finger into the wound along the inguinal canal, and found the passage free from bowel. The swelling was due to effusion within the surrounding tissues.

On the fourth day a dose of castor oil was given. He continued daily to improve. The convalescence and the complete union of the wound were retarded in consequence of an abscess forming between the muscles of the abdomen, and communicating with the wound. A compress and bandage were constantly applied, by which means the discharge gradually ceased, and in about two months from the operation the wound had healed.

◆

CHARING-CROSS HOSPITAL.

CASE OF TRAUMATIC TETANUS.

(Under the care of Mr. Hancock.)

It is always important to record cases in which treatment is *not* successful. Here is one of very acute traumatic tetanus, in which bromide of potassium and belladonna appeared to have no influence in arresting the symptoms. We are indebted to the registrar, Dr. Stretch Dowse, for the notes.

F. R——, aged twenty-nine, of good muscular development, was admitted Dec. 10th, 1868. He was by occupation a mason's laborer, very greatly addicted to habits of intemperance; usually enjoyed robust health. A fortnight previous, whilst in a state of intoxication, he fell upon the back of his head, inflicting a rather severely lacerated contused wound, to which he paid no attention, continuing his drunken habits for some days longer. Three days before coming into hospital he felt very weak, lethargic, and stupid; anxious and fearful of those about him. There was shivering, constant diarrhœa, accompanied with tendency to vomit and inability to sleep. He went to his work on the following morning (Monday), feeling slightly better than he did the day before, his fellow workmen observing to him that his face was much swollen. At this time he felt some stiffness about the right side of the neck. He continued his work during the day, but the following morning when he arose the stiffness and swelling had considerably increased, so much so that when he attempted to eat his breakfast he found for the first time that he was unable to separate his jaws beyond a certain point. In a few hours after this he came to the hospital, and was immediately admitted, presenting the following signs and symptoms:—Face and neck swollen; skin of the former dark and congested; risus sardonicus most marked; pupils dilated; eyes watery. There was great rigidity of the muscles of the neck, which rendered rotation of the head absolutely impossible. He complained of a heavy, aching, grinding condition of pain about the back of the head, extending as low down as the sixth or seventh cervical vertebra, not aggravated by pressure. There was great pain, both with and without movement, of the lower jaw in the parotid region; constant thirst, with great difficulty in swallowing; mastication was impossible; his accent was guttural; pulse 80; temperature 99°; skin moist; extremities cold. The wound had partially united, was dry, not painful, but glazed. He was ordered to bed, having a warm bath first. Hot poultices were repeatedly applied to the wound, and the following mixture given every four hours: Bromide of potassium, half a drachm; tincture of belladonna, twenty minims; water, one drachm. A blister was also applied to the nape of the neck.

Dec. 11th.—Has passed a restless night. Pulse 58; respiration 20; ratio 2 18-20; temperature 99 2-5°. The expression of features, difficulty of swallowing, and state of jaw are the same as yesterday. The blister produced a large bleb, which relieved the pain about the neck. He moves his tongue freely in any direction. He says that he has to swallow a second time before his food passes down the œsophagus. The principal, and doubtless the most urgent symptom that he has, is the feeling of smothering and suffocation about his chest, with difficult breathing. There is a constant secretion of viscid muco-purulent matter from the lungs and bronchial tubes, which is ejected with the most violent effort, by far the larger quantity being sent forcibly through the nostrils. Ordered to continue mixture, with injections of arrowroot, beef-tea, and brandy.

12th.—At 5 o'clock this morning he was lying upon his belly, with his back exposed to a current of cold air from a window just above him. Immediately the current of cold air was felt down the spine, his breathing became hurried, pulse accelerated, face and lips livid, and body rigid and opisthotonotic. This continued for fifteen minutes, during which time he was totally unconscious. In the day he was ordered a turpentine and castor oil enema, and a liniment of chloroform to rub into the spine. It was attempted to administer chloroform during the spasm, but, owing to the congested state of the lungs, the attempt was abandoned. These tetanic spasms succeeded each other every three or four hours during the day, lasting sometimes fifteen minutes, either more or less. The lower jaw became more rigid, and there was less interval between it and the upper.

13th.—Pulse 120; respiration 28; ratio 4 8-28; temperature 100 1-5°. Appears weak and exhausted; saliva dribbles freely from the edges of his mouth; sweat stands upon his forehead in big drops, and produces a cloud of vapor by its evaporation; his face has a livid and congested appearance. He is perfectly conscious between the spasms; strange to say, cold water sprinkled over his face during the fit shortened it very much. At 7.20 he had a very severe spasm, lasting over thirty minutes. He said to the nurse in attendance, "I am going to have another fit; get some cold water!" He immediately lost his intellectual faculties, his body became arched, stiff, and rigid, he foamed at the mouth, his eyeballs protruded, and the eyes became quite insensible to external impressions. After this seizure he had several others of a like nature, until the last, in which he died at 11.20 P.M.

The post-mortem examination revealed no disease of the brain, medulla, or spinal cord. There was pneumonia of both lungs, and his kidneys showed evidence of incipient Bright's disease.

HOSPITAL FOR CONSUMPTION, BROMPTON.

CASE OF PHTHISIS WITH DICROTOUS PULSE; SUDDEN DEATH.

(Under the care of Dr. POWELL.)

The practical interest of the following case lies in the relation shown to exist between the circulatory condition indicated by the dicrotous pulse and the sudden death of the patient.

James B——, aged forty-one, an assistant in a wine business, was admitted an out-patient on Feb. 5th, 1868. He was a tall, spare man, with a very nervous manner and anxious countenance. The pulse was quick, but regular.

History.—The patient had suffered from cough for one year, and from hoarseness for four months: but had been feeling decidedly ill for three weeks only. He had never had hæmoptysis. He complained of weakness, night sweats, some pain in the throat. Had led a rackety life, but had never had syphilis.

Physical signs.—On the right side dullness with dry cavernous respiration; tonsils large; throat congested, with much mucous secretion and salivation.

He was treated with mineral acid and tincture of bark, and an astringent gargle.

Feb. 12th.—The patient's general condition much the same. He complained much of sleeplessness. Nervous manner, almost amounting to agitation, with much confusion and forgetfulness. Pulse rather quick, regular, dicrotous. There was no cardiac murmur. He was recommended to keep quiet, and some chlorodyne ordered at night.

19th.—Patient felt better in the morning before dressing, and went downstairs to get some water. On returning he felt faint, and went to bed again, but almost immediately got up to go to the closet. He came back directly to his room, looking extremely ill, and died almost instantly.

Autopsy.—There was found excavation at the apex of the right lung, with tubercular deposit, and some congestion below. The left lung was consolidated at the apex. The heart was flabby; its right cavities distended with dark fluid blood; all the valves were healthy; there was slight atheromatous deposit in the aorta. The walls of the heart were thin and soft in texture, and proved on microscopical examination to be fatty.

Dr. Powell remarks: The dicrotous pulse shows (at least this is one of the inferences to be derived from it) that the relation between heart-force and systemic resistance is nearly one of balance, the onward current being very feeble, so that in any sudden effort the heart may fail, and fatal syncope ensue. The warning to the patient to keep at rest was not in this case given with sufficient emphasis, being rather intended to diminish the mental excitement than to give rest to the circulation. The extreme nervous agitation of manner was no doubt due to the precarious condition of the circulation in the brain, being analagous to that agitation which follows profuse loss of blood.

The case was of additional importance from the patient having insured his life.

LONDON HOSPITAL.

FRACTURE WITH DISPLACEMENT OF THE SPINE; REDUCTION BY PULLEYS.

(Under the care of Mr. Maunder.)

We published in a previous number a case of dislocation of the spine with displacement, in which reduction was accomplished by means of pulleys. The case was treated in the Liverpool Southern Hospital, under the care of Dr. Wollaston. The following notes, which we have had by us for some time, and which were kindly supplied by Mr. M'Carthy, illustrate a case in which the same mode of treatment was adopted, but the issue of the case was not so satisfactory.

G. H——, aged twenty-one years, on Sept. 11th, 1865, was struck, while in a stooping posture, upon the loins, by a heavy block of wood, and was picked up paralyzed below the hips. On examination, he had lost sensation and motion in his lower extremities; the upper part of the body was bathed in cold perspiration; his aspect anxious; manner excited; pulse 90, weak; the muscles of the arms twitching involuntarily. He complained chiefly of severe pains across the loins, shooting upwards thence. Opposite the first lumbar vertebra was a great prominence, the skin being stretched over it like the strings of a violin over its bridge. The patient being in great agony, Mr. Maunder determined to endeavor to relieve the extreme tension of parts and diminish pain by extension and reduction, as, if the cord had been torn across, the patient would be in no worse condition, and if it had not, the removal of the pressure would be a very considerable advantage gained. Chloroform having been given, the pulleys were applied to the lower extremities, and the shoulders held by a roller-towel to a post fixed in the ground. While extension was cautiously made, the hand of the surgeon pressed upon the projection, and presently, with a crepitating sensation, this disappeared almost completely, leaving only a small nodule displaced. After the operation the patient was entirely relieved from the severe lumbar pains, and in the course of a few hours he had recovered sensibility in the femoral region for about two inches below Poupart's ligament. Pulse stronger; there was retention of urine; restless towards night. Ordered forty minims of tincture of opium.

Sept. 12th.—Slept well; some pain in hypogastric region; countenance cheerful; recovered sensibility along the front and inner part of thigh to within three inches of knee-joint. At this point improvement in cutaneous sensibility ceased, and the bladder was gradually and seriously involved, becoming the seat of acute inflammation and of pain to the patient, of which he died on Sept. 26.

At a post-mortem examination, the body of the first lumbar vertebra was found much broken, and a large piece of it, all but detached, had originally caused the protuberance in the back; the ligaments were greatly torn, and all the nerves, excepting one small one, were severed. The walls of the bladder were thickened and softened, readily breaking down when touched, and containing here and there small abscesses. All the other viscera healthy.

ST. THOMAS'S HOSPITAL.

BURSAL TUMOR BENEATH THE DELTOID.

(Under the care of Mr. Sidney Jones.)

The following is another instance of "tumor," requiring operation. The interest depends in great part upon its diagnosis.

Jane T——, aged twenty-nine, in service, was admitted on the 15th of May, 1868. She had a swelling of the right shoulder, first observed about eighteen months previously. On relaxation of the deltoid, it was evident that the tumor was situated beneath the muscle; it was about the size of an orange, apparently well circumscribed; its surface was somewhat lobulated; it was difficult or impossible to elicit any evidence of fluctuation. There was no effusion into the shoulder-joint. Movements of the latter did not produce pain, and there was no tenderness of the tumor. The patient complained of weakness of the shoulder, and of severe aching pain down the arm, especially after much use of the limb. Mr. Sydney Jones remarked that the impression given on manipulation was that of a fatty tumor, but suggested that it might be a bursa, or, on account of some symptoms of pain in the early history, even a chronic abscess.

On the 27th of May, he punctured with a trocar and canula, blisters and iodine having been freely used previous to admission. There exuded a viscid, gelatinous fluid, which at length became too thick to pass along the canula. A larger canula was then introduced, when a more opaque viscid matter escaped, mixed with a number of bodies of the melon-seed form. As much was evacuated as could be made to pass through the canula. A pad of lint was strapped over the puncture, and as a precautionary measure, in case some communication with the shoulder-joint might exist, an ice-bag was applied.

On the 3d of June the puncture was quite healed; there had been no irritation of the shoulder-joint, but the swelling had resumed its original size. Mr. Sydney Jones made, in the situation of the puncture, an incision large enough to admit the finger, and turned out a large number of button-shaped masses similar to those previousy, evacuated. A strip of oiled lint was introduced and the arm placed in a dish-splint.

10th.—There has been a good deal of diffused pain about the shoulder. There is now free discharge of healthy pus. The cavity to be syringed out night and morning with solution of chlorinated soda, after the use of warm water.

17th.—Discharge much diminished; warm-water dressings.

July 6th.—Quite well, and has continued so ever since.

ST. GEORGE'S HOSPITAL.

A CASE OF FIBROUS POLYPUS TREATED BY LANGENBECK'S METHOD OF OPERATION.

(Under the care of Mr. Rouse.)

There are a few points of interest connected with the following case. First, as to the diagnosis. No one who saw the tumor before the operation doubted its nature; but when it was seized with the forceps it was so soft that it broke down under the pressure. Until a microscopic examination had been made, some thought that a mistake had occurred in the diagnosis; but the extensive absorption of the wall of the orbit in so short a time, and the attachment of the tumor to the basilar surface, were sufficient to prove that it was not a mucous polypus. The operation is worthy of notice, Langenbeck's method not having been very frequently followed in this country. Its simplicity, the perfect exposure of the nasal cavity, and the ease with which the base of the tumor can be seized, not to mention the absence of subsequent disfigurement, render it a most desirable mode of procedure.

E. W——, aged fourteen years, deaf and dumb, was admitted into the hospital on the 5th of August, 1868.

History.—For some months has had gnawing pain in the right side of the face, which has been gradually swelling. For the last three months the right eye has been pushed forwards and outwards.

On admission, there was slight fulness of the whole of the right side of the face. The right eyeball was protruded and pushed outwards, so that the eyelids could not be closed, neither could the eye be turned inwards. There were fulness and hardness at the inner angle of the orbit. The right nasal bone was considerably raised. On looking into the nostril, a fibrous polypus was seen reaching nearly to the outlet. No tumor could be felt in the pharynx.

On the 6th of August, the patient being under the influence of chloroform, Langenbeck's operation was performed, by which means the nasal cavity was well exposed. A pair of polypus forceps was then introduced, with which the polypus was seized and dragged out. The lachrymal bone was found to have been almost entirely absorbed, allowing the tumor to pass into the orbit and push out the eyeball. The polypus had been attached to the basilar surface. The edges of the wound were brought together with silver sutures. The patient progressed favorably, and was discharged cured on the thirteenth day after the operation.

MIDDLESEX HOSPITAL.

CASE OF DISLOCATION OF THE HIP-JOINT; REDUCTION WITHOUT PULLEYS.

(Under the care of Mr. Hulke.)

As is well known, the ordinary plan adopted when the head of the femur is dislocated upon the dorsum of the ilium includes the use of pulleys, by which traction is effected, whilst a perineal belt provides the counter-extending force. It was Dr. Reed, of Rochester, U. S. (according to Mr. Erichsen's "Surgery," fifth edition, 1869), who introduced the process of "manipulation" as a means of reduction, without employing pulleys. In the following case, kindly furnished us by Mr. Norton, house-surgeon, this simple plan was immediately successful.

A woman, aged twenty-eight, was admitted into the hospital in July last, at midnight, with dislocation of the left hip and broken ribs, caused by a fall from a second-floor window whilst drunk. The caput femoris was plainly felt on the dorsum ilii; the thigh was rotated inwards, and flexed at a right angle, the knee resting on the other thigh just above the patella. The injured thigh was half an inch shorter, and the distance between its great trochanter and the anterior superior iliac spine one inch greater than on the uninjured side.

Complete muscular relaxation having been obtained with chloroform, the pelvis was firmly held down on the floor by a couple of assistants (the patient lying on her back on a mattress), while Mr. Hulke made traction of the thigh by a jack-towel clove-hitched above the knee, at first in a vertical direction at right angles to the line of the trunk, and then flexing and adducting the thigh on the abdomen, the head of the bone slipped into the socket with a distinct snap.

Provincial Hospital Reports.

SHEFFIELD PUBLIC HOSPITAL.

INCISED WOUND OF KNEE-JOINT; APPLICATION OF TOURNIQUET TO FEMORAL ARTERY; RECOVERY.

(Under the care of Mr. Arthur Jackson.)

Mr. A. Brietzcke, house-surgeon, has obliged us with a report of the following case:—

Joseph I——, aged thirty-two. At 3 P.M. on the day of admission, while engaged in grinding a large mincing knife, of a half-moon shape, the instrument suddenly slipped from his hand, and inflicted a severe incised wound about two inches long, into the left knee-joint, in a vertical direction, close to the inner side of the patella. He was brought to the hospital in a cab, but walked into the surgery, not being aware of the dangerous character of the injury. On close examination, a small quantity of oily matter, mixed with blood, could be seen escaping from the wound, which was gaping considerably. A single wire suture was used to bring the cut edges into apposition, and a small piece of lint, soaked in collodion, applied to prevent the entrance of air; the limb was then placed in a McIntyre splint, and the patient removed to bed. At 5 P.M., a horseshoe tourniquet was arranged, in order to diminish the flow of blood through the femoral artery. He was put upon milk diet, and a sedative solution of opium was given for the next two days.

August 6th (six days after admission).—Lint removed; wound looks almost the same as when the collodion was first applied, with the exception of some slight superficial purulent discharge at lower third. Tissues around slightly swollen, but there appears to be no fluid in the joint. Dr. Richardson's styptic colloid applied. Tourniquet slackened a little.

24th.—Slight blush around tourniquet, near the seat of pressure; smarting pain. Solution of nitrate of silver applied. Meat daily.

26th.—Erythematous blush decreasing; slight suppuration around wound. Water dressing applied; tourniquet removed. Slight abrasion over the seat of pressure.

On the 31st, there was a rigor lasting for two hours. Skin hot and dry. Temperature in axilla, 103·1° F. Pulse 140; dry tongue.

Sept. 1st.—Wound sloughy, gaping. No repetition of the rigor. No suppuration in the joint. After this the pulse and temperature gradually decreased, whilst he was taking plenty of beef-tea and stimulants.

6th.—Pus collecting in considerable quantity, probably in the joint.

13th.—Wound gradually healing. A clear, yellowish fluid escapes on pressing above the joint.

20th.—Water-dressing to the wound. Patient much improved in health.

27th.—Splint removed. Patient feels well; wound cicatrising; joint a little enlarged, but movable to a certain extent without pain.

Oct. 3d.—Allowed to get up and walk a little with the help of crutches.

6th.—Joint swollen and painful. To return to bed.

8th.—There was a sudden attack of diarrhœa. Ordered an aromatic mixture with tincture of opium, after each liquid stool.

9th.—Patient in a low, weak, nervous state; white, tremulous tongue; aphthæ. A small circumscribed abscess has formed on the inner side of the joint, appearing like a simple bleb, quite superficial. On opening it a small quantity of pus was removed. Iron-and-quinine was now ordered.

26th.—Patient better. Joint painful and enlarged. Cod-liver oil, two drachms three times a day. Obscure deep fluctuation detected on the inner side of the knee, extending upwards above the joint; skin erythematous pain on pressure.

29th.—A deep incision reached the abscess, and about two ounces of pus were removed. Still the joint was not opened. Poultice applied. The cicatrix where the former abscess was opened has now quite healed.

Nov. 20th.—Wounds healed. Slight movement in the joint.

Dec. 1st.—Knee strapped with soap-plaster. Patient walks about on crutches. Knee slightly flexed, but capable of considerable movement. He can also put the foot to the ground.

4th.—Made an out-patient.

BRISTOL GENERAL HOSPITAL.

POISONING BY CONCENTRATED SULPHURIC ACID; RECOVERY.

(Under the care of Dr. Fripp.)

John C——, aged forty, was admitted on August 4th, 1868, at 7.30 A.M. He went to his work about five o'clock in the morning, being employed in a bone-manure manufactory. He had been at work a short time when, feeling thirsty, he drank by mistake from a stone bottle containing oil of vitriol of the concentrated form, such as is used for reducing the bones. His head being thrown well back in the act of drinking, he was involuntarily compelled to swallow a portion, but spat out instantly as much of the acid as possible. He states that he immediately ran to the water-tap, and drank profusely of water, feeling an intense pain and burning sensation down his gullet, and in his epigastrium. He vomited many times, the vomited matter effervescing on coming in contact with the dust. Presently a fellow-workman came to him, and with his assistance he walked to the hospital, a distance of about a mile. He then complained of great pain in the epigastrium, was vomiting a clearish fluid, and had a burning sensation in the mouth, fauces, and gullet. The skin on the upper and lower lips was scorched by the acid, and was of a reddish-brown color. The mouth, tongue, lips, fauces, and pharynx, as far as could be seen, had a whitened and sodden appearance. There was not great difficulty in swallowing, nor did the respiration seem particularly impeded. Pulse 76; skin rather cold. Was in a great state of fright. At 9 P.M., the pulse was 88; there was not so much pain at the epigastrium, but more pain and difficulty in swallowing. Skin moist, and perspiring somewhat.

Aug. 5th.—Passed a fair night, pain and burning sensation continuing. No vomiting, but a very copious spitting of ropy saliva and mucus.

6th.—Going on well; bowels acted twice; stools natural in appearance. Pain in epigastrium diminishing; mouth shedding its mucous membrane.

Treatment.—On his arrival at the hospital, a large dose of bicarbonate of potash in solution was at once administered, which produced instant vomiting of a large quantity of fluid in a state of great effervescence. After a short time two teaspoonfuls of olive oil were given. He was put to bed with hot bottles to his feet. Ordered to have an egg beaten up with milk, and to take at short intervals milk and lime-water. Warm fomentations to his epigastric region. He was kept on milk diet for four days, when, from some family reasons, he left the hospital, although he was still very ill, and was fully warned of the risk he incurred by so doing. He, however, recovered completely.

Remarks.—It is certain that he must have swallowed a large mouthful of the concentrated acid, and though, under the circumstances, it is difficult to estimate exactly the quantity, yet, taking into consideration the position he was in, in the act of drinking, Dr. Fripp thinks he could not have swallowed less than half an ounce, and this, too, under the worst condition—viz., on an empty stomach. The soluble alkali seemed to neutralize at once a quantity of free acid, which previous frequent vomiting had failed to eject. Diluted solutions of the alkaline carbonates possess this advantage over the more insoluble ones, as magnesia: that, by reason of their solubility, they are brought into immediate contact with all parts of the stomach. And one apparent disadvantage, viz., rapid evolution of carbonic acid, is probably an advantage, for very rapid distension of the stomach with gas gives rise to immediate vomiting, which, in fact, occurred in this instance; and the possibility of rupture of an eroded stomach from distension is more than compensated for by the speedy neutralization of such a corrosive as concentrated sulphuric acid.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, February 9th, 1869.

Mr. Solly, F.R.S., President, in the Chair.

FISSION AND EXTROVERSION OF THE BLADDER AND EPISPADIAS, WITH THE RESULTS OF EIGHT CASES TREATED BY PLASTIC OPERATIONS.

By John Wood, F.R.C.S.,

Examiner in Anatomy to the University of London, Assistant-Surgeon to King's College Hospital.

The author commenced by stating that the frequency of this deplorable deformity was greater than was generally supposed. He had himself seen upwards of twenty cases. In its more usual form it was perfectly compatible with viability, and even longevity. One case is recorded by Flajani, of a person aged seventy, and by Quatrefages of two, aged forty-six and forty-nine respectively. It is much less common in the female than in the male; the author had seen two cases in the female, and operated on one. Cases are recorded by Huxham, Oliver, Bonnett, Thiebault, and Ayres, of delivery of a child at full time in females suffering under the deformity.

In both sexes the ossa pubis are widely separated, and the symphysial surfaces can be felt projecting under the integuments on each side of the genital organs. In both, the hinder wall of the bladder is seen as a red, vascular, projecting tumor, often ulcerated, and discharging mucopurulent fluid and blood, and surrounded by a cicatrix, which above is blended with, and obscures, the umbilical mark. In the male, the penis is usually completely epispadiac, with the urethra open along its entire length. The corpora cavernosa are stunted, and fail to cover the urethra above, and they are connected below by an imperfect corpus spongiosum, forming the lower half of the urethra. The glans penis is grooved above by the urethral gutter, but perfect underneath, and is provided with a frænum, and an abundant but split prepuce. The stunted penis is placed flat against the lower part of the bladder, usually covering by its root the papillary orifices of the ureters. The scrotum is perfect, and contains testes; and often a congenital oblique hernia, or a small ventral hernia, is also present. In the female, the clitoris is split, and the anterior commissure of the labia minora wanting, exposing more completely than in the male the orifices of the ureters, and laying open the urethra. The normal os uteri can be seen in the vaginal groove.

The author then reviewed the theories of the cause of the deformity,—viz., that of Duncan and Bonn, who attributed it to the bursting of the fœtal bladder from over-accumulation of allantoic fluid; that of Velpeau and Phillips, who considered it to be caused by ulceration of the hypogastric region between the second and third months of intra uterine life; and that of Vrolik and other teratologists, who explained it by an arrest of development similar to those producing harelip, fissio, thoracis, and ectopia cordis. He considered that the latter view was undoubtedly the correct one, but was of the opinion that the arrest of development was itself owing to a process of morbid change resulting in adhesion of the front part of the allantoic mucous and vascular layers to the membranes of the ovum at the site of the future placenta, at about the end of the first month. He gave drawings of the fœtal allantoic formation at this period, and described varieties of the deformity illustrative of the period and extent of the arrest of development,—from simple fissure of the urethra (epispadias), and of the urachus and abdominal wall simply (ectopia vesicæ), on the one hand, representing a later arrest of development; to those extreme cases presenting a common cloacal opening of the genito-urinary organs and rectum, with imperforate anus, on the other, which are the results of a morbid change and consequent arrest of development at a still earlier period than the cases which form the especial subject of the paper.

Mr. Wood next alluded to the efforts made by surgeons at various times—viz., Dieffenbach, Langenbeck, and others in this country—to relieve by plastic operations this frightful deformity, in all instances with partial or complete failure. He briefly described Professor Pancoast's case operated on in Philadelphia, and Dr. Ayres' in New York, attributing to the former the first adoption of the idea of turning flaps from the sides of the abdominal wall with the skin surface towards the exposed mucous membrane. Dr. Ayres' case was that of a female who had borne a full-grown child four months before, and was entirely successful after two operations. He also alluded to the operations performed by Mr. Holmes in this country. He then gave a detailed account of eight cases in which he had himself operated between the years 1863 and 1869. In seven of these he had been successful in providing a complete covering for the bladder. In the last two he also succeeded in covering the penis with a prepuce, completing the upper wall of the urethra, and forming a fair substitute for the meatus urinarius. In one case (the only female operated upon) an entire failure had resulted, in consequence of the extreme youth and violent crying of the patient.

Three methods of covering the bladder had been employed. The first was by two lateral flaps taken from the groin, with their bases towards the thigh, scrotum, and penis, and united by sutures in the median line, with their raw surfaces towards and touching the exposed mucous membrane of the bladder. After many operations, necessitated by partial failures of the plan, the bladder was at length completely covered in, with only one opening, placed at the root of the penis. The boy died afterwards of erysipelas of the head and face, and the parts operated on were shown in a preparation, the bladder being opened behind to show the union of the flaps within, and the formation of a pseudo-mucous membrane on the raw surface.

The next method consisted in the employment of one reversed lateral flap, in combination with a smaller reversed umbilical flap, both turned with their skin surfaces towards the bladder, and covered by another larger lateral flap, placed with its raw surface downward upon them. The reversed umbilical flap was adopted to obviate the great difficulty experienced in the earlier cases in closing up a fistulous opening which remained above the bladder. It cannot always be employed with safety, in consequence of the extreme tenuity of the abdominal parietes at this part in some of these cases. It was found better to attempt it at the time of the first operation than by a subsequent one, and to make it large enough to afford a firm hold by primary adhesion to the lateral flaps which cover it.

The third method employed consisted in the formation of a larger umbilical flap, turned with its skin surface upon the bladder, and big enough to cover its exposed mucous membrane as far down as the root of the penis. This was covered by two lateral flaps taken from the groin, with their bases towards the penis, scrotum, and thigh, and united in the median line over the umbilical or reversed one, with their raw surfaces in contact with it. By this means the author succeeded, in five cases, in covering by one operation the entire surface of the bladder.

In this step of the operation the chief features of the author's plan, as most successfully practised, are the use of the broad, reversed umbilical flap, to prevent the upper fistulous openings; and the arrangement of the lateral or groin flaps, with their bases turned towards the scrotum and thigh, so as to receive for their supply of blood the external pudic and superficial epigastric vessels from the common femoral uninjured, and so to prevent sloughing or shrinkage.

In the second step of his operation, as performed in the last two cases—viz., that of providing a preputial covering for the glans penis and an upper wall for the urethra, the author availed himself of the front part of the scrotum and the skin of the lower surface of the penis, which he raised from the deeper parts in the form of a bridge of skin, retained at both ends to its original connexions, and lifted in the middle over and across the penis, like a saddle. This was placed with its raw surface in contact with that of a reversed fold of skin, turned over from the sides of the opening left by the first operation, the whole being held together by a continued wire suture. The sides of the wound in the scrotum were then brought together vertically over the tunicæ vaginalis and testicles, the hinder half of the bag of the scrotum being amply sufficient to cover the whole. This part of the operation proved entirely successful in the last two cases, which were the only ones in which the method has been tried.

It was stated by Pancoast that the hairs which afterwards grow on the reversed surface of the flap became gradually shed by the depilatory action of the urine upon them. In the author's two last cases, both adults, this process is certainly going on, but it is still necessary to remove some of the hairs as they grow by the use of a pair of forceps passed into the artificially formed meatus urinarius. This is, however, a process requiring only a little trouble and dexterity on the part of the patient himself, and to be repeated whenever the incrustation of the phosphates upon them causes uneasiness. A very dilute nitric-acid lotion aids in the process of cleansing. In future adult cases, the author proposes to use a depilatory upon the parts previous to operation. As the cicatrices contracted, the orifice of the artificial urethra became more tightened and braced up, and the transplanted dartos could be felt to clasp the finger vigorously when passed into the opening. Already the urine sometimes accumulates in the bladder, when the patient is lying down, in sufficient quantity to be expelled in a stream, on rising, to the distance of a few inches from the penis. In both cases no sinuses now remain. They now wear a silver-plated instrument connected with an india-rubber urinal, made by Mr. Matthews, of Portugal-street. It is closely fitted round the penis, not enclosing the scrotum, thereby removing the pain and annoyance from the sores and tenderness which the trickling urine caused upon the surface of the scrotum. During the night, when the patients lie in a recumbent position, very little urine escapes—not more than can be caught by a sponge placed under the penis; and in the daytime a much smaller and less conspicuous urinal can be worn than that which was necessary before the operation.

The last case operated on by the author—that of a man aged thirty-five—was exhibited to the Fellows at the meeting. An india-rubber ring can now be placed round the artificial prepuce and the corona glandis, so as to retain the water entirely for a short time. The paper was illustrated by numerous casts, models, and drawings, from the several patients in various stages of the operations.

The President, in cordially thanking Mr. Wood for his important contribution, said he had seen many failures, but none to succeed. He had never attempted the operation, not having the courage to face the antecedents of such an operation. Mr. Wood's success was a cause for general rejoicing.

Mr. Bryant wanted to know the period of life at which the operation was performed, as he had been struck with what Nature had herself done to remedy such cases. He had often seen much retraction of the projecting bladder, leaving only a furrow well marked. This led him to think that the operation was hardly justifiable in early life. He had not himself performed the operation, but, in two cases, let alone, the opening had almost closed. He was under the impression that the pubic bones were cleft in both.

Mr. Thomas Smith had seen many of these operations, especially of those performed by Mr. Holmes, but had never seen anything to induce him to operate. In the case alluded to as operated on by Mr. Holmes with success, the operation had better not been done. The boy's after-sufferings were very great, chiefly owing to the formation of concretions in the artificial pouch. There was also extremely violent neuralgia in the stump of the penis. He had to take morphia in very large quantities. Mr. Wood's operation was extremely ingenious, especially in that which related to an umbilical flap and lifting up the penis. The growing of the hair was a serious defect, but this might easily have been destroyed previous to the operation. He had never seen anything like that described by Mr. Bryant.

Mr. Weeden Cooke remarked that in one of the female cases already mentioned a good deal might have been done; but the kidneys and ureter had already become sacculated so as to serve as an artificial bladder.

Mr. Wood, in replying, stated that he had seen a good many cases, but never one like those described by Mr. Bryant. Really when unaided they went from bad to worse. He had, in leaving the hairs unremoved, trusted a good deal to Pancoast's statement that they fell off. He should certainly remove them next. He would like a child to know what was going on before he operated on it. Only two of his cases were adults. In females, he thought, the difficulty would be even greater than in males. In plastic surgery it was impossible to say *à priori* what could, and what could not, be done.

CLINICAL SOCIETY OF LONDON.

FRIDAY, JANUARY 23D, 1869.

Mr. PAGET, President, in the Chair.

Mr. Holmes, after referring to the various conditions under which an operation might fail to find a stone in the urinary bladder after cutting, related a case in which he had operated at St. George's Hospital, but could discover no calculus after freely opening the urethra; and, after careful examination of the bladder, his impression, confirmed by the opinion of those of his colleagues who were present, was that the stone, probably a small one, must have escaped unnoticed with the first gush of the urine.

After some remarks from Mr. Holthouse, and a suggestion from Mr. Maunder respecting certain rare instances of a stone lodging behind the pubes,

Mr. Lee related a case in which, no stone being found in the bladder, it was subsequently discovered that one had lodged in the urethra, anterior to the incision.

Mr. Heath remarked that somewhat similar experiences had been met with at other hospitals. He drew attention more particularly to the error committed by many operators in cutting upwards in children, misled by the prevalent notion that the bladder lay higher in them than in adults. There was but one rule, to cut along the groove in the staff to the end.

Mr. Thomas Smith thought Mr. Holmes's the only reasonable explanation. He commented upon the severe symptoms often connected with the presence of small vesical calculi, and referred to the cases in which some of these might be crushed between the sound and the finger introduced into the rectum.

The President thought they were all greatly indebted to Mr. Holmes for bringing forward this experience. He directed attention to an instance in which error had arisen from striking the sound against the pelvic wall, an accompanying quiver of the bladder aiding the deception; and he thought such errors were apt to occur with the use, for sounding, of the staff. He recommended adherence to the rule, that a sound should always be passed immediately before the operation, prior to the introduction of the staff.

Dr. Greenhow communicated a case of Rheumatic Chorea in a child, aged fourteen, treated successfully by bromide of potassium. The case was principally remarkable for its severity. The special treatment was commenced nine days after the more severe symptoms had set in, ten grains of bromide and two grains of iodide of potassium being given three times a day, while four ounces of port-wine and two of brandy were ordered daily. The improvement was immediate, and the patient was soon after discharged convalescent.

A second case of Chorea was narrated by Dr. Hall Davis. A married lady, aged twenty, in her fourth month of pregnancy, had suffered from general choreic movements for three weeks. Having been unsuccessfully treated with valerianate of zinc, bromide of ammonium was given in doses of five grains every four hours, along with five minims of liq. arsenicalis; the result was satisfactory. Dr. Davis referred to a second case of chorea complicating pregnancy, in which he had found the same drug generally useful.

Dr. Weber referred to three cases of Rheumatic Chorea, in one of which bromide of potassium had been given in larger doses than those employed by Dr. Greenhow without appreciable effect. In the other two cases the bromide seemed to do harm, for recovery was more rapid after it was discontinued, although no other medicine was given. Dr. Weber pointed out that in rheumatic chorea, as in acute rheumatism, absence of movement ought to be the chief aim of the physician, in promoting which opium and its alkaloids are the most important therapeutic agents.

Dr. Down drew attention to the fact that in Dr. Greenhow's case the patient was put on stimulants at the same time with the bromide of potassium.

Dr. Sims objected to the employment of antispasmodic medicines in chorea, alleging that, when so treated, the disease is more likely to recur than when iron or cod-liver oil is given.

Drs. Broadbent and Buzzard had tried bromide of potassium without success in numerous cases. Dr. Buzzard attributed the marked improvement in the patient entirely to the alcoholic stimulants.

Mr. Kesteven related a case of Rheumatic Chorea, in which the bromide of potassium was given with success.

Dr. Powell thought that the cure in Dr. Greenhow's case might, with great plausibility, be attributed to the iodide of potassium with which it was combined.

Dr. Greenhow, in reply, stated that he did not think that bromide of potassium was applicable in any cases of chorea excepting those of rheumatic origin; and, in illustration, related three cases of chorea occurring in children of the same family, in which he regarded the disease as developmental rather than dyscrasic, and had found the bromide of potassium entirely useless. They were cured by the valerianate of zinc.

Mr. Hinton read the history of an interesting case in which a solid mass was removed from the tympanum by incision of the membrana tympani.

Editorial.

INTEMPERANCE AND LEGISLATION.

We shall not be suspected of any extreme opinions on the subject of beer and beer-shops. At the same time this question is one which we cannot overlook. When all thoughtful people are trying to arrive at sound views of the pauperizing influences in society, and trying to raise the spirit of independence and self-respect in the minds of the poor, it is not for us to be altogether silent. The question of beer and beer-shops is both a social and a medical one. No profession suffers more than ours from the intemperance of the poor, and no profession is more able to speak as to the connection between intemperance and pauperism. Nothing has surprised us more in recent discussions on pauperism than the extent to which drunkenness has been ignored as a cause of poverty. A little reflection, however, mitigated our surprise, and suggested the explanation. The almost complete disregard of intemperance as a factor in the production of pauperism is simply a reaction from the other extreme view that attributes all the evils of society to drunkenness. Of all things that have suffered from intemperance, nothing has suffered so much as the cause of temperance itself. We must have some mediator between the teetotaler, who can see no good in any drink but water, and the more modern social philosopher, who either ignores drunkenness altogether, or looks upon it as an effect of poverty, and not a cause of it. Neither science nor experience supports the extreme teetotal view of intemperance. Both these teachers tell us that men do better with some other beverage in moderation than with mere water, and that in certain circumstances of disease the use of various forms of alcohol as a curative or dietetic agent is invaluable. We regard the teetotaler as a well-meaning but somewhat narrow-minded man, whose doctrine is too severe for common life, and who talks too confidently about a question of profound difficulty. We would entreat him and his class to consider how entirely they have failed to impress practical men with the truth of their views, or with the practicability of greatly extending the habit of teetotalism in the country. Statesmen and physicians — the men who have most to do with human nature—have been as classes entirely uninfluenced by the physiological or ethical opinions of the total-abstinence school; and if any legislative cure of our great national vice is to be attempted, it will have to be by the united demands of moderate men for a practical measure of legislation.

We wish to record our emphatic opinion that there are sufficient grounds for legislation on this subject. Whether we regard the amount of disease produced by drunkenness, or the quickness with which the habitual drinker and his family become a public burden on the occurrence of the slightest accident or disease, we conceive that it is the bounden duty of the state, which has saddled the nation with the care of the poor in the last resort, to give the nation any reasonable control over the public-house system. It is agreed on all hands that the public-house system has a good deal to do with making men and families poor. Whether we take up the report of an investigation into the mortality and poverty of a large town, such as one that lies before us on Liverpool; or hear the account of men who live in country places on the economic and moral effects of public-houses in villages; or study the character and the causation of poverty as it presents itself to us in connection with the great charities of London, medical or otherwise, there is a very extensive agreement that the public-house system has a great deal to do with the causation of the most helpless forms of poverty. A large proportion — perhaps a third — of the scanty wages of the dock laborer or of the agricultural laborer is spent on himself in the public-house, and the wife and children have to live and pay the rent on the remainder. This means chronic starvation and overcrowding, with all their physical and moral consequences. It means no investment in a sick fund or other provision for a rainy day. Let the slightest accident or illness befall this laborer, and the day after he is on the parish, a burden to all his fellow-parishioners, and a heavy one to those immediately above him, who only differ from him in the fact that they are sober, and have spent the proportion of their means, which he spent in the public-house, in providing an additional room in the house, or in an insurance against sickness like that of a sick fund.

There are only two answers to this view of the connection between the public-house system and poverty which deserve consideration. The first is this: that a man goes to a public-house because he is poisoned by the bad atmosphere or disgusted with the bad furniture of his own house, and that the beer or spirit which he gets is a real refreshment to him; that his intemperance is an effect of his bad physical conditions, not the cause of them. This opinion has had some weighty and wise advocates. But it is in itself, in our opinion, not very defensible. Surely a man cannot get any permanent strength or refreshment out of huge potations of very indifferent beer that will remedy the depression that comes of bad air and scanty comforts. He gets a temporary sensation of stupid satisfaction or elevation out of them; and, considering how poor his life is in sensations, we must not judge too severely his tendency to buy a very vulgar one cheaply. But if legislation could help his better sense, and dispose him to save even the shilling or two a week which numerous licensed temptations now induce him to spend, we could conceive no law more benificent or philosophical. The few shillings a week which such legislation might help him to save would soon give the man comforts and sensations of health and respect which no amount of even good beer or spirit could give him. And, besides, whatever virtue there is in a moderate quantity of good beer, it should be domestically used. The wife should have her share of it as well as the husband. The other serious objector to be answered is the man who vindicates the drinking system on the ground of the sacredness of personal liberty. Well, we are not greatly enamored of the liberty which permits a man to spend a third of his wages to his own cheek between Saturday and Monday or Tuesday. It is an abuse of language to call this liberty. And when it is remembered that the man who does this does it virtually at the public cost—at the cost of immediately becoming a pauper on the occurrence of the least disablement for work,—the assertion of personal liberty is felt to be ridiculous. If the present public-house system affects the amount of the poor-rate to be paid, it is a question of public importance, not of personal liberty.

We think that there is most urgent need, in the interest of the poor and of the ratepayers, and of public health and morals, for some extension of the restrictions already existing on the sale of intoxicating drinks. We are sensible of the uses of these drinks; but in order to be useful, the habitual consumption of them must be moderate. The immoderate indulgence in them unfits for work, causes disease, and takes away money which is needed for other forms of food and comfort. The beer-houses seem, judging from actual facts, and from the nature of their licences, to be a lower and more demoralizing class of houses than the ordinary public house. And we think that they might be dealt with separately, and at once, without waiting for that utopian period when Government has time "to deal with the whole question." This is one of the ways of doing nothing. And we are sorry that Mr. Bruce had no better encouragement for those who wish for wise and moderate legislation on a tremendous evil. It is extremely difficult to devise an entirely unobjectionable authority to dispense licences. The Excise is certainly bad, and has worked badly. But the magistrates are not above suspicion in this matter. Perhaps the best solution of the difficulty would be, to regulate the number of houses according to population, to be more severe in exacting high proofs of respectability in publicans and in the way in which they conduct their business. Another principle might be tried, of granting licences only on the requisition of a certain proportion of the inhabitants of a district. There are many cases in which drunkenness is a disease, and should be treated as such; but it is vain to hope for a proper recognition of this truth till we have first tried some legislative treatment of the habit as a social vice.

◆

CONNECTION OF HERPES WITH LESIONS OF THE NERVE-TRUNKS.

That the nervous system exercises a powerful influence on the process of nutrition is now generally acknowledged, though there are probably few physiologists who would agree in defining the precise mode in which it is exerted, or the limits to which it may extend. Some, with Dr. Brown-Séquard, would be disposed to refer it to a direct influence exerted upon the substance of the tissues, causing them to attract more or less blood, according to their requirements, and leading secondarily to variations in the calibre of the vessels, and the force and rapidity of the current of blood through them. Such nerves might clearly be termed trophic nerves. Others, on the other hand, might hold that the nerves influence nutrition through their vaso-motor power, permitting now more, now less, nutritive material to be distributed to a given part; though a fresh difficulty immediately arises in the attempt to determine whether the vessels possess a system of nerves governing their active dilatation, or whether such enlargement is due only to the relaxation of the muscular parietes consequent on withdrawal of the nervous influence. The evidence derived from section of the sympathetic seems, at all events, to prove that something more than mere active or passive dilatation of the vessels is required to induce inflammation; for it has been shown that an increased current of blood, with its concomitant phenomena of augmented heat, increased secretions, and more acute sensibility, may exist for months after section of the sympathetic, without proceeding to disease. One at least of these additional circumstances appears to be insufficient nourishment; for if, after section of the nerves supplying any part, the animal be deprived of food, the increased activity of interstitial absorption leads to rapid disintegration of the several tissues, and destructive inflammation soon supervenes. Another is probably irritation of the trunk or ganglion. It is not improbable that from want of care in conducting post mortem examinations, many instances of disease arising from nervous lesion are overlooked, which might furnish an insight into the causes of the production of inflammatory diseases, or into the development of new growths.

These remarks have been suggested by a paper written by M. Prouet in the last number of the *Archives de Médecine*, in which he adduces some remarkable instances of the influence of morbid states of the nerves in producing various diseases; and, amongst others, gives several of herpes and erythema, which appear to be in the highest degree interesting, and will certainly lead to further investigation.

In one of these cases of herpes zoster, occurring in a child, treated by M. Barensprung, the spinal cord, with the anterior and posterior roots of the spinal nerves, were found perfectly healthy; but, on opening the intervertebral foramina, it was found that the sixth, seventh, and eighth intercostal nerves were enlarged and reddened for the space of an inch, owing to the presence of large and tortuous vessels which traversed the neurilemma. The seventh, which was the nerve principally affected, was half as large again as the fifth or ninth. A very similar case, occurring in an old woman suffering from cancer, has been reported by M. Charcot, only that in this instance the spinal ganglia were red and swollen. From these cases it would clearly appear that herpes zoster, from the local characteristic sharp pain that accompanies it, which has hitherto been regarded as a completely superficial and cutaneous affection allied to a neuralgia, is, perhaps, symptomatic of, and secondary to, lesion of the ganglia or nerves from which the nervous supply of the part effected is derived; and it may be possible hereafter, in such and analogous cases, to determine whether the cutaneous affection is the result of the irritation of the ordinary cerebro-spinal or sympathetic nerves, or whether it is due to the affection of certain trophic nerves that exert a direct influence on the nutrition of the part.

MEDICAL CHARGES FOR SPECIAL SERVICES.

In lately considering the proper scale of charges for the medical services rendered by family practitioners, we did not take into account the occasional demands that are made on most men who are very actively engaged, to undertake professional attendance of a kind quite foreign to their ordinary work. Perhaps a wealthy patient goes to London from a place a hundred miles in the country, is taken ill at his hotel, and wishes both to avoid a strange doctor, and to travel back, as soon as may be, under the charge of his usual home attendant. So he despatches a telegram, and brings a busy practitioner to town on the wings of the next express, in much perturbation of mind at the supposed severe illness of his friend and and neighbor, as well as at the certainly severe illnesses of a dozen or so of people from whom the telegram calls him away. Arrived at the hotel, the hapless doctor finds his patient enjoying a bottle of wine, and recovering from some one of the many ailments which an enlightened public describes as 'a bad cold.' The doctor curses his fate, tells his patient to follow him on the morrow, and returns himself by the night mail. During his absence, the rector's child has had an attack of convulsions, and the squire's lady has been taken in labour. The energetic young practitioner lately established over the way has been called in to both patients; and has succeeded in impressing upon their minds the undesirableness of sending to a doctor who is always gadding about—running up to London, you know, on any sort of excuse. When Christmas comes, the telegram patient is astounded at being charged for the London trip. It was not, he says, in the common run of practice at all. It was a nice little jaunt for the doctor—quite an outing for him, besides being a thing that he would be able to talk about. Moreover, he had his share of the '34 port. The railway ticket, and perhaps five shillings for the visit would not be too much; but nothing beyond that can be thought of. The energetic young man aforesaid would not have asked for more; and, indeed, he is gaining quite a reputation by the moderation of his charges. It is well if the affair does not end in a quarrel, and in all the bitterness that a provincial quarrel breeds.

In less extreme cases, where attendance is required by a habitual patient who has gone twenty miles away on a visit, or by some fanciful invalid living beyond the range of the doctor's customary journeys, the inconveniences are perhaps less manifest at the time; but they are not the less real and important in their general bearing upon the work and business of a practice. Long absences from home—absences, that is, of four or five hours at a time,—or the reputation of having frequently to take long journeys, are very detrimental to a general practitioner. They seriously affect obstetric practice. People say that Mr. A—— is always absent. They prevent patients with trivial ailments from waiting at the house, or from returning presently, and send them either to seek advice elsewhere, or to go home and prosper under the *vis medicatrix*. And, in every practice, the care of trivial ailments is a matter that ought to be a source of considerable remuneration, without corresponding anxiety to the doctor, because it is a matter of the highest importance to the public. Such care should frequently imply the prevention of grave evils; and there is no better test of a good practitioner than that his habitual patients rarely have serious illnesses. Demands to perform work that interferes with obstetricy, and that tends to deprive a practice of its daily fringe of slight ailments, should, we think, always bear a high rate of remuneration; and, as the need for this is not at first sight obvious to the public, we have determined to place our opinion upon record, as a means of strengthening the hands of any practitioner who may have occasion to refer to it. We lately mentioned a scale of ordinary charges that we had known to work well in practice; and that referred only to a possible eight or ten mile journey. Beyond this distance, patients cannot be visited without what may reasonably be called long absence; and we think that half a guinea a mile may fairly be charged for the miles between eight and ten. Over ten miles we come to railway journeys, and to the fact that everybody in Little Pedlington would know that the doctor "had gone away in the train." What sufficient reason is there for demanding less than the London fee on the part of the country practitioner for long visits?—and this would not usually exceed two guineas for three miles, nor fall below half-a-guinea a mile. Of course particular cases will arise that can only be determined by the discretion of the doctor. The fact that a convenient line of railway was in ordinary use in practice, and that the distant patient was near a station, and practically easily accessible, would be entitled to some weight. The pecuniary resources of the patient should receive, as they always do, full and generous consideration. The scale we have suggested would probably be too high for young men just entering upon professional work, and afflicted with ample leisure. We have had before our minds chiefly the case of a mature and experienced practitioner, fully engaged among the various classes of patients that make up a country *clientèle* of the most desirable kind, and suddenly called upon for an unusual and inconvenient absence from his daily duties. In such cases there is often no opportunity of mentioning beforehand what will be required; but, whenever this is possible, it should be done as a matter of common fairness. It would always be easy to say (if time permitted): "The service you ask is one that I cannot undertake without being adequately paid; and I state this now, in order to save any future misapprehension."

That our caution about young men is not unnecessary may be shown by a narrative that will appropriately close this article. An old gentleman who lived in Belgravia was going down the Thames in a steamer. The funnel was lowered upon his head in passing under one of the bridges, and a young surgeon among the passengers stepped forward to announce his profession and repair damages. He was then a member of the College of three weeks' standing, and was unable to sleep at night from dread of an expected interview with the examiners at the Hall. The old gentleman was pleased with him, and invited him to take charge of the case, saying that the steamboat company would have to pay. Delighted with his first patient, the young gentleman came from his home in the eastern parts of town, and paid seven professional visits at the west. For these he charged forty-nine guineas. The company paid ten guineas into court and fought the case. Mr. Serjeant Parry, in cross-examination discovered that the plaintiff charged seven guineas a visit on the ground that he was "a pure surgeon." "Pray, sir," said the learned Serjeant, "how do you spell the word 'pure'? Is it 'p-u-r-e' or 'p-u-e-r'?" Judgment was given for the defendants.

THE CAUSES OF DIABETES.

In the last few numbers of *Revue des Cours Scientifiques* is contained an interesting paper by M. Bouchardat on the causes of Diabetes, or, as he terms it, of Glycosuria. M. Bouchardat is well known as having many years ago instituted, in conjunction with M. Sandras, experiments bearing on the digestion of amylaceous compounds, and he has obtained a high reputation for his skill in the treatment of cases of the disease under notice. M. Bouchardat's views in respect of the digestion of starchy compounds are, briefly, that he believes they are converted into dextrine and glycose in the alimentary canal through the agency of the pancreatic juice; that these substances, with the pancreatic ferment, are absorbed, and transmitted to the liver, which acts as a moderator; and that the glycose, dextrine, and ferment are gradually poured into the blood, where the action of the ferment on the dextine is continued and completed. Under ordinary circumstances the amount of glycose present at any one time does not exceed the amount that can be retained in the vessels, and can be oxydised by the ordinary acts of respiration. But in the diabetic or glycosuric patient there is—and this is an essential fact in the pathogeny of the disease—an excess of glycose in the blood; and as soon as this surpasses a certain small amount, it immediately osmoses through the vessels, and makes its appearance in the urine. Now, the causes which may lead to the presence of an excess of glycose in the blood are twofold. On the one hand, there may be excess of production in a given time; or on the other, with normal production, there may be deficient destruction or oxidation; and generally it may be said that both conditions are present. He proceeds to show that the chief circumstances leading to an excess of production are not only, as is now generally admitted, the ingestion of large quantities of amylaceous food, but, secondly, a rapid and excessive conversion of this into glycose, due partly to hyper-secretion of the pancreatic juice, partly to an extraordinary activity of the ferment this juice contains and partly to the stomach taking on a perverted action, by virtue of which it secretes a fluid containing a ferment analogous to that of the pancreas, that is capable of effecting the conversion of starch into glycose. More frequently, however, the excess of glycose in the blood results from incomplete oxidation of that which is normally present; and this may result from various circumstances, amongst which the following may be enumerated: —1. Insufficient exercise, the influence of which has engaged the attention of but few observers, though he is himself disposed to rank occupations of a sedentary nature as amongst the most potent predisposing causes of the disease, being most influential when coincident with a highly farinaceous diet. 2. Strong mental disturbance, whether of a depressing or of an exciting character; thus he has noticed the loss of a child, in more instances than one, induce an attack of the disease, whilst relapses are not infrequent in diabetics who have given way to violent passion. The deleterious influence of sexual excess may be included under the same head. He has rarely noticed it as an accompaniment of hemiplegia or paraplegia. Gout and rheumatism, on the other hand, have in his practice been frequent complications, the malady in such cases resulting from surcharge of the system with calorifacient material, whilst the presence of an excess of uric acid diminishes the conditions favorable to the oxidation of the glycose. The occurrence of diabetes as a result of exposure to cold, and as a complication in phthisis, bronchitis, and asthma, which is not uncommon, may, in like manner, be explained on the principle of insufficient oxidation. The enlargement of the liver and of the stomach often met with in diabetics he regards as induced merely by excessive alimentation and defective exercise. As regards hereditary transmission, he finds that whilst he has very rarely observed any sugar in the urine of the children of his patients, it is not uncommon in brothers, which is attributable either to a predisposition common to both, or perhaps to similarity of habits, diet, &c. As M. Bouchardat has been freely consulted by Russians, Swedes, Englishmen, and Spaniards, he is little disposed to assign any influence to climatic conditions, except that exposure to cold and damp aggravates the symptoms of the disease. The rarity with which women are diabetic is remarkable, when it is remembered that the presence of sugar in the urine is constant, as M. Blot and M. Lecocq have shown, in women in the puerperal state and when nursing, and in one-half of all pregnant women. Diabetic women, however, rarely or never become *enceinte*. The rarity of diabetes in infants he attributes to the activity of their respiration. Finally, he notices that whilst those pursuing regular out-door avocations seldom suffer from diabetes, the disease is especially liable to occur in all those who, putting forth great mental exertion and leading a sedentary life, are yet in easy circumstances, keep a good table and eat largely, rapidly, and without due mastication. To so great an extent does this hold, that he believes, out of twenty men of from forty to sixty years of age, belonging to the legislative assemblies or to learned societies, or who occupy distinguished positions in commerce or in finance, or even in the army, *one* is sure to contain sugar in his urine.

◆

RECURRENT HERPES PRÆPUTIALIS.

An interesting little *brochure* has been forwarded to us on the subject of Recurrent Herpes Præputialis, written by M. Doyon, of Lyons, in which he seeks to establish, though at most unconscionable length, the diagnosis of a frequent but hitherto imperfectly recognised disease, for which the medicinal waters of Uriage, near Lyons, constitute an easy and agreeable means of cure. Recurrent herpes is, he says, often mistaken for chancroid. It is the fourth in order of frequency amongst venereal affections, gonorrhœa occupying the first place, then chancroid, and then syphilis. It uniformly follows some primary venereal affection, dies away, and then reappears for many years together about every two months. The group of vescicles appear in close proximity to the site of the primary affection. Each eruption lasts about five or six days, is unaccompanied by any febrile symptoms, and disappears by desquamation. It is more frequently a sequela of chancroid than of gonorrhœa, and of this than of true chancre. Its first appearance is usually about three weeks after the termination of the primary lesion. Each group of vescicles has a diameter of somewhat less than an inch, and the successive crops reappear very constantly in the same place, the seat of election being apparently the corona glandis or præputio-balanal fold. Its outbreak is often induced by excess in drinking, a few wakeful nights, want of cleanliness, and, above all, by sexual intercourse. It may persist longer than five or six days, and he records a case where the small ulcers left by the vescicles lasted eighteen months. As regards the diagnosis, herpes præputialis is not likely to be confounded with any other affection than a soft chancre, and from this it is distinguished by the itching and pain which accompany its outbreak, the number and mode of grouping of the vesicles, the presence of an inflammatory areola round each, the non-contagious character of the disease, and finally, the non-occurrence of bubo. M. Doyon appears to consider that the origin of the affection may be traced to a primary or to an inherited *dartrous* diathesis, or that state of constitution in which eczema, lichen, pityriasis, and other similar cutaneous affections are likely to develop. As regards the treatment, after discussing various plans, amongst which the best is a liniment of tannic acid and glycerine, though all frequently fail, he dwells on the advantages of the waters of Uriage, which possess a purgative, alterative, diuretic, and perhaps tonic character, and are to be employed both internally and in the form of baths. The mineral waters of Uriage appear to contain sulphur and chloride of sodium, similar to those of Harrowgate, Moffat, or Rothsay.

Medical Annotations.

"Ne quid nimis."

THE SPONTANEOUS GENERATION QUESTION.

It is, in one point of view, somewhat melancholy to have to chronicle those profounder changes in prevailing scientific opinion which seem, for the moment, almost to dislocate the whole framework of our beliefs on some of the most important questions. There is something terrible, to many who know that they *must* navigate the sea of science, in these long, rolling waves of opinion with their dreadful flux and reflux; and many timid souls would gladly sit upon the shore, if they might, and chant the "*suave mari magno.*" And even those who least sympathise with the effeminate dread of innovation in itself, are often sickened, rather than amused, by the completeness and suddenness with which a theoretical structure is washed away. It gives us all a momentary sense of intellectual nakedness, so to speak, which is anything but pleasant.

Such a catastrophe is at this moment apparently impending. A most able article, by Professor J. Hughes Bennett, in the *Popular Science Review* for January, is perhaps the latest and fullest exposition of a scientific movement which has been gathering force for a long time past, and which must almost inevitably establish the possibility of spontaneous generation, and dismiss the shibboleth of orthodox science, the "*omne vivum ex ovo*," to the limbo of dead and forgotten maxims.

Of Dr. Bennett's article we shall only further say that anyone interested in those aspects of physiology which are now occupying the highest scientific intellects of the day, ought to study it with care. It is, after all, only the legitimate conclusion to which its author's researches have long been visibly pointing, though it is now expressed with a greater power and clearness than he has hitherto given to his expositions of the molecular theory of life. What we would chiefly indicate is the remarkable consensus of opinion between a number of our foremost scientific men upon this important question. In the first place, the long warfare between Pasteur and Pouchet, in France, is now visibly tending towards a victory of the latter physiologist's opinions; and this notwithstanding a most evident disparity in favor of his antagonist, assures controversial power, and neatness of argument and illustration. Simultaneously, Mr. Huxley has expressed an equally heterodox view, with great force, in a very interesting paper recently published in the *Fortnightly Review;* but it is no new thing to find Mr. Huxley leaning to the heretical side, so this may not be thought very surprising. But the most striking symptom of the general tendency of opinion is the conversion of Professor Owen—that great champion of teleological orthodoxy in science—to views which to a good many worthy folk will seem perfectly awful. After a number of observations on Pasteur and Pouchet, virtually admitting the victory of the latter, "It seems to me, then," says Professor Owen ("Anatomy and Physiology of Vertebrates," vol. iii., p. 817), "more consistent with the present phase of dynamical science, and the observed gradations of living things, to suppose that sarcode, or the 'protogenal' jelly-speck, should be formable through concurrence of conditions favoring such combination of their elements, and involving a change of force productive of their contractions and extensions, molecular attractions and repulsions—and that sarcode has so become from the first period when its irritative repetition resulted in the vast, indefinite masses of 'eozoon,' exemplifying the earliest process of 'formification,' or organic crystallisation,—than that all existing sarcodes or 'protogens' are the result of genetic descent from a germ or cell, due to a primary act of miraculous interposition."

FLOGGING GIRLS.

That women, like other feeble creatures, are naturally and instinctively cruel, especially to their own kind, is a fact perfectly familiar to students of human character, and familiar enough also, as a mere abstract proposition, to the great majority of persons. The proposition is universally known with regard to men of feminine character and tendencies; and it seems, indeed, as if cruelty were the natural accompaniment of weakness. The customs of drawing-rooms rather interfere with the general recognition of this tendency; but now, at a time when women appear earnestly bent upon engaging in many masculine callings, and when their fitness for these callings is a matter for serious consideration, it is certainly right that this element in the case should not be left wholly out of sight. It has received, quite recently, a new and very unexpected illustration.

A few weeks ago "sensation placards" adorned our streets and railway stations, containing, in a conspicuous line, something about "Flogging Girls." We presumed that the line referred to the report in a police court of the performances of some modern, and, we hoped, degenerate imitator of that Mrs. Brownrigg, who

"Whipped two female 'prentices to death,
And hid them in the coal-hole."

We were not desirous to receive into our minds the various details that the *Daily Telegraph* would probably describe in glowing language; and, perhaps too negligently, we passed by on the other side. Since then the *Saturday Review* has played the part of the good Samaritan to the victims that we failed to succor; and has given to the world the astounding knowledge that English mothers—not the beaten concubines of costermongers—but married women of classes from which we expect intelligence and refinement, are in the habit of systematically stripping their daughters and flogging them. Not only do they do this, but they even take sweet council together for the invention of fresh instruments of torture, and for the devising of means by which to increase the shame and pain of their victims. In all this they have been aided and abetted by the editor—or, we hope, the editress—of a magazine especially devoted to the cultivation of feminine accomplishments, and in which, under the thin disguise of a discussion, as if upon an open question, these women have been permitted to compare their experiences, and to advocate their plans.

The *Saturday Review* has now given so much publicity to this unsavory question that it is only left to us to say something about its moral and its medical aspects, and to declare our perfectly assured conviction that a mother or governess who cannot govern her girls without flogging them is perfectly unfit to be trusted with the charge of girls at all. A painful and degrading punishment would be certain, in most cases, to change a girl's whole moral nature for the worse; and there are grave medical reasons against the infliction of floggings at the period of puberty. We trust that some of the doctresses of the present day will be good enough to enlighten their sex upon this part of the question; and, for our own part, we beg leave to assure those whom it may concern that we look upon their chastisements as equally stupid and cruel. The wish to please men is not an uncommon spring of feminine action; and it may save some hapless girls from being thrashed if we add, for the special behoof of the sisterhood of governesses, that men abhor cruelty in women as much as some women love to practise it.

CHARBON, AND THE USE OF CARBOLIC ACID.

A severe epidemic has been raging of late amongst the cattle-herds of Auvergne, in France. The Minister of Agriculture appointed a Committee to investigate the origin and nature of the disease; and amongst the results which have just been published by M. Bouley, the President of the Commission, there are many points of interest. The disease, which until now had been designated by the popular name of the "mountain disease," turns out to be nothing else than charbon. The men who have charge of the herds are frequently affected with malignant pustule. Another interesting point, in connexion with Mr. Davaine's recent experiments on the presence of bacteria in the blood of carbuncular animals, is that, contrary to M. Davaine's views, the Committee have not been able to trace the invariable presence of these animalcules in cases of charbon. Yet the blood that does not contain them is not the less contagious. Bacteria are constantly found in the blood of rabbits upon which inoculation has been performed, but this is far from being the case with animals of the bovine species. This would tend to prove that the presence of bacteria in carbuncular blood is the effect, and not the cause, of the disease, as M. Davaine believes. The only character constantly furnished by the blood of the animals which were subjected to experiment is, that when the serum was treated with alcohol (90°) a precipitate was obtained which, instead of being albumen, was simply diastase in a pulverulent condition. When put in contact with starch, it converted the latter into glucose. Now it is well known that the blood of healthy animals in which putrid fermentation has taken place exhibits a like property. M. Sanson, the reporter of the Commission, therefore concludes that charbon and putridity are synonymous and identical.

But by far the most interesting result of these researches has been the discovery of the powerful action of carbolic acid in modifying, and even radically curing, these formidable affections. Its employment was suggested by the knowledge of its action in preventing or arresting putridity. Further experiments have been made in France since M. Sanson's researches to which we have just alluded, and we learn that the effects of carbolic acid have been perfectly wonderful. In two cases—those of a man and his child—the internal administration of carbolic acid rapidly checked the course of the disease, and resulted in a perfect cure where death was the only probable termination. At Etampes, a town of France where carbuncular diseases are most frequent and fatal, five animals which were submitted to the internal employment of carbolic acid have all, it is asserted, been saved from imminent death. These facts deserve to be carefully recorded, in order that further investigation may immediately be carried on in the same direction.

THE HÔPITAL ST. LOUIS.

This far-famed hospital, the name of which will ever be coupled with the history of skin diseases, is now receiving great attention in Paris. Some important measures have recently been taken by the Administration of the Assistance Publique, which will tend to give additional interest and lustre to this noted centre of dermatological clinique. The most important of these improvements consists in the formation of a museum attached to the hospital, in which will be collected all the specimens and materials necessary for the illustration and teaching of cutaneous affections. On a recent visit to St. Louis we were greatly pleased with the aspect of this department, which already presents much interest, and promises well for the future. We were peculiarly struck with Baretta's quite new and beautiful casts, made out of a peculiar *carton* composition of which he is the inventor, and which M. Hardy exhibited on a recent occasion to the Paris Academy of Medicine. They are most wonderful reproductions, true to life, and representing to perfection the hue of the healthy and of the diseased skin, and all the minutest details of the morbid appearances. M. Baretta has kept the secret of his composition; but it is much to be desired that so perfect a method of representing morbid appearances be speedily divulged and rapidly propagated. It applies not only to external lesions, for diseases of the tongue, uterus, &c., are as faithfully represented. On a table in the middle of the room we observed some huge note-books, wherein the house-surgeons write the stories of the cases pictured on the walls; and a library is in process of formation, on the shelves of which will be ranged all the writings extant on diseases of the skin. One important detail must not be forgotten. There is now at St. Louis a permanent photographic studio, where the surgeons and physicians of the hospital may have their interesting cases photographed or moulded. M. Husson intends extending this to the other hospitals of Paris; and M. Montméja, the St. Louis photographic artist, is already going the rounds of the different hospitals, taking views of rare and interesting morbid lesions. These will be published weekly in a "Photographic Review of the Paris Hospitals," and, through the care of M. Husson, copies will be sent to the provincial medical schools, where there are fewer opportunities of witnessing such cases. We need not enlarge upon the benefits which must accrue from these new materials for the better study of disease.

THE NEGLECT OF VACCINATION.

It is useless at this time of day to argue over again the necessity of vaccination. On no subject is the voice of the profession more completely in accord with the voice of the enlightened public than on the duty of enforcing by stringent legal penalties this precautionary measure. The civil practitioner is at one with his brethern of the military and naval services as to the necessity, not only of vaccinating every child within three months after birth, but even of repeating the operation in adult life, should there exist the slightest suspicion that its original performance had not been efficacious. It is to be regretted, therefore, that persons are still to be found, even among the educated classes, who not only neglect vaccination in the case of their own children, but even publicly announce that they have conscientious scruples against it. At the Oldham police-court, for example, two clergymen appeared in answer to a summons for neglect of vaccination in their families, and though in one case an attempt was made to plead extenuating circumstances, still the court inflicted on them the penalty of a fine. The necessity for even more summary legislation will be admitted when it is known that in Oldham and its suburbs there were no fewer than 837 children who had not been vaccinated. At Stoke, again, the neglect to vaccinate was exemplified in the case, not of a clergyman, indeed, but of no less a functionary than a guardian. A Mr. Gilman is of opinion that vaccination is useless. Not only so, but he is willing to suffer martyrdom for his nonconformity with the medical dogma, and announces that "he has not the slightest objection to meet a summons, and state his views before a magistrate." What Mr. Gilman's "views" may be, we have not the faintest curiosity to know. Indeed, as he talks of his "animosity" to vaccination, he avows himself to be little better than a fanatic. We only hope the magistrate may take him at his word, and, after listening to a full exposure of his "views" (and himself), inflict at once the fine allowed by the law, so that the less enlightened public at least may have an edifying example of what they incur by neglect of a statutory precaution, and may thereby be induced to give practical effect to the maxim (which Mr. Gilman ought to know professionally) that even in sanitary breaches "a stitch in time saves nine."

DR. EDWARD SMITH, F.R.S., ON VENTILATION.

On 24th February, Dr. E. Smith, F.R.S., delivered a lecture "On Ventilation," the greater portion being taken up with an exposition of the "abstract principles involved in the movements of air, and the numerous methods by which architects and others are groping their way with much blundering to a satisfactory result." The first part of the lecture was of the most elementary character; very little was said of secondary currents, the relative weight of large columns of air of different degrees of temperature and humidity, the relative effects of ozone, carbonic acid, and organic matters in excess, and many other points. Dr. E. Smith propounded some novel and somewhat startling propositions, which we venture to think would not have suggested themseves to anyone but an inspector of workhouses. Then he expressed his opinion "that a certain want of freshness, or closeness, may occur without known injury to health; that foul odors do not necessarily imply unhealthiness, and that we must strive to ascertain whether the foul smell proceeds from dirty clothes, and particularly dirty stockings and unwashed skins, or is simply that which occurs with cleanly persons." We have been accustomed to think that the former exhalations are even more injurious than the latter, simply because they are in a more concentrated form, and we envy the possession of those experienced olfactory powers which enable Dr. Smith to perceive and weigh the effect of the variety of smells with so much nicety. We might have expected a Fellow of the Royal Society to propose some scientific standard of good ventilation; but Dr. Smith is of opinion "that it is sufficient when the air of the night's use is not more offensive than is found in an ordinary private bedroom of the middle class." We shall no longer wonder at any amount of closeness and foulness which may be found in workhouses under Dr. Smith's inspection. The fact is, the whole of these propositions are conceived in the spirit of compromise, and demand our most strenuous protest. There is no subject which is more obscure than ventilation either in its scientific or practical aspect, but it is clear that no enlightenment can be hoped for from the medical adviser of the Poor-law Board.

STATISTICS OF SICKNESS AND MORTALITY.

In an interesting paper contributed to the *Gazette Médicale de Paris*, Dr. Vacher has called attention to the exceptional characters of the past and the passing seasons—characters that have been common to nearly the whole of Europe, and that appear to have influenced in a marked degree the nature of the principal diseases. These, according to the author, have been chiefly puerperal fever, scarlet fever, and diphtheria. In Paris, puerperal fever made its appearance in November, and has since prevailed, causing many deaths, and rendering necessary the closure of at least one maternity department. The fatality of scarlet fever in London, and of typhus and diphtheria at Berlin, are also commented upon; and a well-merited tribute is paid to the wisdom of the arrangements by which Dr. Graily Hewitt banished puerperal fever from the wards of the British Lying-in-Hospital, by dividing into four-bedded chambers rigorously isolated.

The main object of the author is, however, to call attention to the advantages that might be expected to accrue from a well-devised system of international statistics of mortality. To this object Paris has hitherto contributed nothing; but, while Dr. Vacher's paper was actually in the press, the Municipal council arrived at the determination to issue a weekly medical bulletin. The labors of Dr. Farr, of Zuelzer at Berlin, and of Glatter at Vienna, have already laid the foundation of the arrangements that would be required for a perfect system; but our experience in England has taught us that statistics of mortality alone, although highly valuable for many purposes, by no means satisfy the requirements of science. We must seek to obtain the statistics of occurring sickness, and the organisation of the principal continental cities would enable them, if they were so disposed, to take precedence of ourselves in the fulfillment of this desideratum.

THE APHASIA QUESTION.

At a late meeting of the Medical Society of London a paper was read by Dr. Bateman, of Norwich, on the "Localisation of Speech." This is a subject which Dr. Bateman is well fitted to handle, and it is one on which he can speak with some authority. His object was chiefly a judicial one. He reviewed carefully the opinions put forward as to the seat of the faculty of language by Gall, Schrœder van der Kolk, Bouillaud, Dax, and Broca. After paying a warm tribute to Gall, the author disposed, as we think, satisfactorily of Schrœder van der Kolk's view, that speech resides in the olivary bodies. He stated, however, that Jaccoud is a warm supporter of this doctrine. Next he considered Bouillaud's opinion, that the anterior cerebral lobes are the seat of speech. Next the doctrine of Dax, that speech resides in the left hemisphere only; and finally, he remarked in some detail on what he called the *ne plus ultra* of pathological topography, the very narrow limit to which M. Broca confines articulate language. From a careful consideration of the recorded evidence, and from cases he had himself observed, he found that he could not accept M. Broca's conclusions, although he gave him great praise for much valuable work. M. Broca has, at all events, very clear opinions, if his conclusions have the disadvantage of being limited, and thus he presents a fine field for attack by those who are fond of dealing in generalities, and who dislike definite issues. Dr. Bateman treated him with great fairness. The author showed how the researches of Carl Vogt on the development of the brains of apes and microcephali bore on the question. In man, the infero-lateral sinus in the fœtus is filled by the more rapid development of the third frontal convolution, whereas in apes and in microcephali it is filled by the development of the two central folds known as transverse frontal and transverse parietal. An animated discussion followed the reading of the paper, but, to say the least, several speakers did not keep very closely to the subject in hand.

AN ANTIDOTE TO SNAKE POISON.

We have received from a correspondent, recently arrived in this country from Australia, an account of Professor Halford's experiments on animals, with the view of discovering an agent which should avert the poisonous effects of the bites of venomous snakes. The subject has recently attracted a large amount of attention in that country, owing to the professor having employed his remedy — a solution of ammonia injected into the veins—with success in the case of a man exhibiting all the symptoms of snake-poisoning in a dangerous degree. We take our account from a contemporary. A man was bitten by a venomous snake, which he had taken into his hands, supposing it to be dead. Not long afterwards he became drowsy, and mentioned the occurrence to one of his mates. The latter immediately set about procuring medical assistance, but by the time it arrived the man was comatose, and his lower extremities paralysed. Galvanism and other usual remedies were applied, but without effect. In this extremity the medical man first called in caused Dr. Halford to be telegraphed for. The case was the first opportunity he had had of applying his new treatment to a human being, and he at first felt some hesitation in resorting to it. An incision, however, was made through the skin, exposing the superficial radial vein, and the point of the syringe being introduced into the vein, the injection (of ammonia) was completed. The beneficial effect was immediate. From an almost pulseless state, and from a stupor verging on death, the patient speedily became conscious. He has been steadily recovering since, and he is now reported to be nearly well. Whether the earlier treatment in any way contributed to the cure cannot, perhaps, be certainly known, but there appears to be little doubt—the medical men entertain none—that the case must have ended fatally but for Professor Halford's treatment. We require, of course, some further cases before the merit of the discovery can be determined. Ammonia is not a new remedy for snake bites, but Dr. Halford has the credit unquestionably of having applied it in a direct way by injection into the blood, so that its effects should be immediate and general. Its application in this way could only be safe in skilled hands. The discovery was not fortuitous, but resulted from a consideration of the microscopical alterations which he found taking place in the bloodvessels of animals subjected to the snake-poison. It is only right to add, however, that the observations of Dr. Fayrer and others have failed to verify the statements made by Dr. Halford on the altered condition of the blood-corpuscles. We learn from a letter which Dr. Halford addressed to the *Melbourne Argus*, that he had previously instituted a series of experiments on the lower animals, and he publishes five of them which he performed on dogs. In four instances the treatment was successful. To carry out the treatment a solution of ammonia—of the strength of one part of strongest liquor ammoniæ to two parts of distilled water—and an ordinary hypodermic syringe are required. The ammonia is thrown directly, but gradually, into the blood by puncturing any superficial vein, and may be repeated as its beneficial operation ceases.

OPIUM IN DIABETES.

There is nothing novel in the use of opium in diabetes, but there is something new in the mode and results of its exhibition as portrayed by a case which Dr. Pavy brought before the notice of the Clinical Society at its last meeting. The instance was that of a female, aged sixty-eight, who was apparently cured by the narcotic, without restriction as to food. The patient was placed in May upon the ordinary middle diet of the hospital, which included an allowance of bread, potatoes, and beer. She was also ordered four ounces of brandy, and two bottles of soda-water per diem; and this mode of living was continued as long as she remained in the hospital. The opium given was in the form of a pill, three times a day, and the dose was gradually increased. At the outset the quantity of urine was 100 oz., the specific gravity 1040, the quantity of sugar per oz. 32¾ grains, and the amount of sugar for the twenty-four hours, 3275 grains. Within three weeks the quantity of opium administered was raised to ten grains and a half per diem. It was then suddenly discontinued on account of a greater degree of drowsiness than was desirable being produced; but in a few days it was recommenced, and this time, being more gradually increased, was borne without producing any sign of disturbance. The sugar disappeared on July 31st, and remained absent as long as she continued in the hospital,—namely, until October 28th. At the time the sugar disappeared, the patient was taking nine grains of opium per diem. It was afterwards still further increased to twelve grains, and then gradually diminished until October 17th, when all was taken off, the patient during the remaining time taking no medicine, and passing no sugar. Dr. Pavy brought some urine, freshly passed, to the Society, and this, upon being tested with the cupropotassic solution, was seen to be free from sugar. Dr. Pavy thought there was still much to be learnt about the extent of the power of opium in different cases. His belief was, from the case which formed the basis of his communication, and other experience that he had had, that it would be found sufficient of itself in many instances, amongst elderly subjects, where the disease was observed to assume its mildest form, to check the elimination of sugar. In young and middle-aged subjects, however, where the disease as a rule assumed a much more severe character, his experience was that, to obtain a similar effect, the restricted diet must be conjoined. The success of the treatment is interesting, and we have thought it deserving of special notice.

CARBOLIC ACID IN MALARIOUS FEVER.

From a despatch which has been forwarded by Sir Henry Barkly to the Colonial Office we learn that Dr. Barraut, the Acting Sanitary Inspector at the Mauritius, and Dr. W. H. Tassier of the same place, have been not only using carbolic acid extensively as a disinfectant, but they have been employing solutions of the pure variety, prepared by Messrs. Calvert and Co., in the direct treatment of the fever cases in the epidemic in that island. These gentlemen speak highly of the therapeutical powers of the acid in intermittent fever. It was employed by them in two ways. One grain of the pure medicinal acid in one ounce of water, with a little brandy or bitter infusion, was administered as a medicine three times a day, and with, it is asserted, remarkably good effects, the relapses being less frequent than after the use of quinine. It was chiefly in those cases in which the fit was ushered in by vomiting that Dr. Barraut found the carbolic acid acted with the greatest advantage. Another method of treatment was by hypodermic injection of a solution of the pure acid; and a table of twenty-seven cases is given in illustration of the effects, with the detailed account of others. The strength of the injection used by Dr. Tassier was sixty-four grains to four ounces of water, of which as much as from twelve to thirty minims were used at a time. We have elsewhere directed attention to the caution which is required in the use of this powerful agent, which, it must be remembered, is a poison; but this method of employing it, as well as the object in view, are, we imagine, novel. We must await the results of further trials before deciding as to the value of the practice. If these should be confirmatory of the experiences of Drs. Barraut and Tassier the discovery will prove both important and interesting.

PRESCRIBING IN CHEAP PERIODICALS.

A most dangerous practice prevails of publishing in some of the cheap literature of the day various receipts for the cure of minor ailments, and it is one that is certainly upon the increase. Many of the prescriptions so given are absurd, and even dangerous; and this is not to be wondered at if we consider that the writer is often very deficient in all real knowledge of medicine, and that he is assisted by the errors of the printer, to whom the symbols of quantities are so many hieroglyphics. Our attention has been called to the following prescription for instance: "Syr. of poppies, one ounce and a half; syr. of squills, half an ounce; tincture of digitalis, thirty drops: a teaspoonful to be given to a child *frequently*." We can quite imagine a fractious baby being dosed into the effectual quietness of death by such a mixture.

CHLOROFORM IN THE URINE.

A very important observation has been made relative to the properties of the urine of patients who have inhaled chloroform. If the ordinary sugar test be applied—viz., sulphate of copper and potash,—the reaction seems to indicate the presence of a large amount of sugar. The reduction of the copper, however, is not due to sugar, but to chloroform. So says a writer in the *Journal de Pharmacie d'Anvers*. The chloroform is detected thus: a current of air is passed through the urine, then made to traverse a hot porcelain tube, and finally to pass through a Liebig's bulb, containing a solution of nitrate of silver. The chlorine derived from the chloroform precipitates, when present, the silver in the form of chloride.

VACCINATION IN MADRAS IN 1867.

The attempt to disseminate the benefits of vaccination amongst the prejudiced natives of India is up-hill work; and fortunate, therefore, is it that there are judicious and energetic men occupying the posts of public vaccinators. Dr. Shortt is one of these, and his report on the progress made in vaccination in 1867 will be read with interest. The total number of persons operated upon was 270,749, or 76,240 more than in 1866. The results were satisfactory in 89·58 per cent. in the whole Presidency. Something has been done to diminish the frequency with which inoculation is practised, for in the districts where this is more frequently had recourse to, 38 additional vaccinators have been appointed, and are hard at work.

It is with great satisfaction that we are able to inform our readers that Professor von Langenbeck and Professor Virchow have intimated their approval of the designed institution of a Marshall Hall Memorial, and expressed a wish that their names may be included among the list of subscribers. The elevated scientific position which the names of Langenbeck and Virchow occupy—the former as one of the foremost surgeons in Europe, and the latter as one of the first pathologists and most original thinkers of the present age—eminently fit them for estimating aright the labors and scientific character of a man like the late Dr. Marshall Hall.

Odd Papers.

ABSTRACT OF

THE GULSTONIAN LECTURES

ON

CERTAIN POINTS IN THE STUDY AND CLASSIFICATION OF DISEASES OF THE NERVOUS SYSTEM.

Delivered at the Royal College of Physicians.

BY J. HUGHLINGS JACKSON, M.D., F.R.C.P.

LECTURE I.

After some introductory remarks, the lecturer urged that, whenever it is possible, we should study each case of nervous disease in a threefold manner: as it shows (1) damage at a certain point in a sensori-motor tract (Organ); (2) as it is an instance of local change of some wide-spread Tissue; and (3) as it is one of disorder of Function. He takes the word organ to imply, not only nervous centres, but—illustrating by motor organs—the nerves to the muscles they are known to govern. He remarks, too, on the importance of considering the relations parts have by their arterial supply. Arteries give to parts which have no relationship by continuity of duties, a relationship by community of nutrition.

When a certain muscular tract is affected—face, arm, and leg,—we infer that the corresponding internal lesion is in the region of the opposite corpus striatum, or thalamus opticus. Hemiplegia, and its mobile counterpart, hemispasm, the author believes, point to the same internal region damaged: probably not to the very same part. But although these motor disorders are alike as damages of one organ, they are different as disorders of function. It is the function of nervous matter to "store up" force for future expenditure. In hemiplegia, nervous tissue being destroyed, no force can be "stored up," and therefore none is expended. In hemispasm, nervous tissue being simply "unstable," force is "stored up," and is expended in a disorderly way. So then, besides noting the extent of muscular tracts affected, we have from the same stand-point to consider conditions of muscles in time.

This complimentary study of the effect of absence of function, and "over-function," of nervous organs, is important for several reasons, and notably for this reason, that—in one instance at least—the muscles put in action when a nervous organ is "discharged," are not only those palsied when that organ is destroyed. In hemiplegia, the unilateral muscles are palsied; but in hemispasm these, and the bilateral as well, are put in motion. These facts are in accordance with, and, the lecturer believes, verify, the hypothesis Dr. Broadbent has put forward on unilateral and bilateral movements.

There is also to be studied the particular nature of the tissue-change: whether it be, for instance, disease of the true celebrant, nerve-tissue, or of the subservient, connective tissue; or, in more medical illustration, whether, for instance, the local change in cases of hemiplegia be a syphilitic nodule or an escape of blood in the motor tract, since in each of these, although the region palsied may be the same (both being cases of the common form of hemiplegia), they are really two different diseases.

Dr. Jackson believes that the general scientific world will more and more look to us for facts as to the physiology of the nervous system, and especially for more precise facts on the relation of mind to brain, such as cases of defect of speech supply. He urges that, whilst as medical men we endeavor in particular cases to find the organ damaged, we should as physiologists endeavor to trace the differences of speciality in the ascending line of function from the spinal cord to the cerebral hemisphere. By a careful study and comparison of the effects of damage by disease to each of the geographical regions of the nervous system we shall, he thinks, reach a knowledge of the fundamental plan of structure of the nervous system, and thus find out what is the general principle of localisation throughout the nervous system. He mentioned *Seriatim* the chief symptoms produced by lesion of one lateral half of the spinal cord, medulla oblongata and pons Varolii, those produced by lesion of the crus cerebri, thalamus opticus, and spoke in minute detail of the symptoms resulting from lesion of the corpus striatum. The corpus striatum is often damaged, and therefore the symptoms resulting from disease of this centre can be frequently studied. It lies close upon the organ of mind, and work at the disorders of function of the muscular region this motor centre governs (hemiplegia, hemichorea, and hemispasm), will, the author believes, give us a clue to the true intrepretation of cases which it is the custom to call aphasic, &c., and to a knowledge of the principle of localisation and of the action of the two hemispheres in mental processes. He entered in some detail into the question of localisation. By a consideration of the symptoms produced by disease of the corpus striatum, the lecturer endeavored to account for the paradox that—assuming the so-called faculty of language to "reside" in every part of the brain—damage near to the [left] corpus striatum did, and that damage distant from that body did not, destroy speech. This part of the lecture does not admit of brief abstract.

LECTUTE II.

Continuing the subject of the Medical Physiology of the Cerebral Hemisphere, the lecturer gave a condensed account of some of the innumerable varieties of defects of speech which attend disease of, and of the hemisphere near to, the corpus striatum on one side, usually the left. He thought, with regard to the patient's mental condition, it was above all most important to bear in mind the lapse of time from the seizure, and mentioned cases in illustration. He related cases of *temporary* loss of speech presumably from embolism, in which cases, as in those of permanent loss of speech, there was an inability to write as well as to speak. He thought that specimens of writing from patients so suffering were much needed. In some cases of temporary loss of speech occurring with unilateral spasm the patient could write. He spoke of children speechless from birth, and alluded to the bearing of these cases on the important hypothesis put forward independently, and almost contemporaneously, by Broca and Moxon. He tried to show that defects of speech should be classified on the same fundamental principle as grossly motor defects—into those implying destruction and into those implying instability of nervous tissue; or, in other words, into those in which there is diminution of power to speak, and those in which the defect is disorder of speech—*e. g.*, mistakes in words. He believes the mental condition is different in the two classes of cases.

With a view to support still further the doctrine of localisation he holds, he tried to show from the phenomena of some cases of hemispasm (occurring with disease of one cerebral hemisphere), that there is an order of frequency in the parts in which the spasm commences, and pointed out that there is also a "compound sequence" in the march of the spasm. He insisted on the necessity of recording what is seen to take place in the simplest cases of convulsion, and hoped that from analysing the "compound sequences" in these cases, we may learn something of the internal relations given to muscular regions which externally are widely separated. He pointed out that the phenomena of hemispasm show that muscles acting bilaterally are practically *equally* connected with each of the corpora striata—a conclusion which Dr. Broadbent had some years ago arrived at deductively. The phenomena of the severest cases of hemispasm from disease of one hemisphere, however, in which both sides of the body are convulsed, led him to a modification of Broadbent's hypothesis. Thus, taking one side of the brain, the right, the lecturer thinks the muscles acting unilaterally, both of the left and of the right side of the body, are represented in the right side of the brain, but that the muscles of the left side of the body are especially represented there—1st, more in quantity, for they are more affected when the hemisphere discharges: 2ndly, first in time (instability), for they are affected before those of the right side. He thinks that, having from the study of the effects of want of action and of "over-action" of the corpus striatum, arrived at a better knowledge of the plan of composition of one nervous organ, we may fairly use this knowledge as a means of further investigation. He thinks that Broadbent's hypothesis, and the facts which so strikingly confirm it, help us to a better understanding of the action of *two* hemispheres in mental processes. From a consideration of the phenomena of such cases as that of a man (the left side of whose brain was damaged) who could not speak, but could understand what was said to him, who could not write, but could copy writing, and who might ejaculate—from the consideration of such a case, the lecturer was led to believe that the fundamental defect in loss of speech from disease in one hemisphere is inability to reproduce words voluntarily, because the leading motor part of one (the left) side of the brain is damaged. Involuntary reproduction (understanding words) remains possible, because the automatic side (right) is intact. Thus, reduced to its simplest form, loss of speech corresponds to hemiplegia, in which form of palsy the voluntary movements are lost, the involuntary preserved. In other words, it seems that the "unit of action" of the nervous system is—as we might expect from the organism being a two-sided one—double the unit of composition. There is, however, a difference betwixt damage to the corpus striatim and damage to the hemisphere just above it—viz., that whilst damage to *either* of the corpora striata produces, practically, the same effect—viz., loss o the most voluntary movements of the limbs on but *one* side of the body, damage to *but one side* of the brain—usually the left—will destroy voluntary speech altogether. This, however, is not the objection it, at first glance, appears to be; for in the highest sensori-motor processes we cannot expect that there will be *two* sides for the "cessation of automatic action and the dawn of volition," which is, Spencer says, one and the same thing. The two brains cannot be *mere* duplicates if damage to one only will make a man speechless. For those processes, than which there are none higher, there must surely be *one* side which is leading. The lecturer supposes that the processes for judging distance, for walking, for talking, and for thinking are fundamently alike, and that unless the patient who is rendered speechless by damage to one motor side of his brain had (in addition to right and left sensory regions) processes for the subjective movements of words remaining, he would not be able to *understand* a proposition—*i. e.*, he would not be able to give relations of coexistence (coexistence is, according to Spencer, alternate sequence) to images developed by its two terms, which terms are presented to him in a *simple sequence*, any more than he can, without movement, estimate the *relations* of *two* external objects by impressions on two sense surfaces.

LECTURE III.

From the point of view of Tissue changes, the lecturer first considered the influence of the kind of lesion on the *condition* of muscles affected. He next mentioned that certain changes seem, so to speak, to prefer particular localities. And after speaking of cerebral hæmorrhage, and of the changes which syphilis causes, he spoke of tumors. Intracranial tumors grow almost anywhere, and produce symptoms in one or more of three ways. (1) They press gradually, and thus produce palsy of cranial nerves. Tumors of the cerebellum (case related) produce disordered gait by squeezing the pons, crus cerebri, and crus cerebelli. The rapidity of pressure is the important matter. If very slow pressure be exerted, there may be no obvious symptoms when parts are much deformed; in sudden pressure, as in cases of meningeal hæmorrhage from bursting of a cerebral aneurism, death will occur very quickly, even in five minutes. (2) Tumors cause secondary changes—e. g., optic neuritis, and those changes on which convulsion, "brain fever," &c., depend. (3) Vascular tumors occasionally kill by hæmorrhage. The lecturer related several cases of this kind. Sometimes no recognisable symptoms are produced by intracranial tumor. A case of tumor of both cerebellar lobes was related, in which there had been no motor symptoms referable to the cerebellum.

Plugging of arteries occurs from syphilitic nodes of arteries (Wilks), and thus syphilitic hemiplegia so arising is only *indirectly* syphilitic. For the *real* change on which the palsy hangs in such cases is not the syphilitic disease of the vessel, but softening of the corpus striatum consequent on blocking of that vessel's channel. Two other kinds of syphilitic hemiplegia—the second from growth of a nodule in the motor tract, the third "epileptic," occurring with disease of the surface of the hemisphere—were considered, as were also syphilitic palsies of cranial nerves and "syphilitic epilepsy," in order to show that the therapeutics of syphilitic affections of the nervous system are markedly successful only in *recent* cases of "effusion of lymph"—e. g., recent palsies of cranial nerves,—and rarely in the several varieties of hemiplegia and in convulsion. He instanced a case of recovery without drugs from hemiplegia due to blocking of the middle cerebral artery at a point where the vessel was narrowed by an encircling node. Recovery from convulsions or from epileptic hemiplegia, the result of syphilis, is, he thinks, very doubtfully due to iodide of potassium. He thinks the bromide of potassium keeps off the fits better than the iodide in "syphilitic epilepsy." Yet he thinks that iodide of potassium should be given for at least six months whenever a patient suffers from any syphilitic nervous affection, in order to stop new changes which may, for instance, be slowly damaging the vessels without at once causing any obvious symptoms.

The lecturer tried to show that there is a practical distinction betwixt the symptoms occurring with coarse disease of the brain—e. g., tumor, syphilitic deposit, abscess, &c.—and disease which is not coarse. When, for instance, any one comes for chronic convulsion, the order of investigation he follows is first to find out whether the internal local changes are presumably minute, and, inferentially, that the patient will live for years epileptic; or whether the internal local changes on which the fits directly depend are secondary to *coarse* disease, which will destroy life or gravely incapacitate. The symptoms implying coarse disease (Bright's disease being excluded) are, severe diffused headache in unusual places—e. g., on one side of the head, at the back of the head shooting to the eyes; "purposeless vomiting" with much straining, particularly when at night, and especially if the appetite keep good; the symptoms of cerebral fever, and, above all, inflammation of both optic nerves, which may exist when the patient can read the smallest type. None of these symptoms point to any particular kind of coarse disease, and none of them are "localising" symptoms.

He then spoke under the head of Combination of Factors. In some cases a large clot destroys an elaborate structure—usually the higher motor tract—and at once produces a certain well-known form of hemiplegia with insensibility, leaving the pulse, respiration, temperature, and retinal circulation, if not at a normal, certainly at a common standard. Saying nothing of the clot being often an incident in wide-spread bodily degeneration, and taking a case in which the clot was the only marked abnormality found in any viscus post mortem, we have, after considering the doings of the clot in its character as a destroyer of an elaborate structure, to consider it in its character as a foreign body lying in a highly vascular part of the system. In other words, we have to distinguish betwixt primary and local, and secondary and general symptoms. Some time—it varies much—after the local effusion, labored pulse comes on, and there is quickened and perhaps irregular respiration, a rise of temperature, sweating, retracted belly, reversed abdominal action in inspiration, with other signs of congestion of the lungs. The symptoms may, the lecturer thinks, be considered as, so to speak, a quicker representation of the usually slower march of "cerebral fever" from tumor. Indeed, clot itself occasionally produces a similar slow march after the patient has "recovered" from the local motor symptoms which the clot caused when first effused; optic neuritis and other diffusions may occur. He thinks the term "brain fever" useful clinically, and that the word "fever" so used implies more than mere feverishness. We have not only to think of "fever poisons" affecting particular organs, but of "fevers" produced by changes in particular organs.

THE SICK POOR OF PARIS.

By Blanchard Jerrold.

No. I.

Since Messrs. Blondel and L. Ser reported to the Assistance Publique authorities of Paris on the hospitals and workhouse infirmaries of London in 1862, many important changes and modifications have been brought about in the treatment of the Paris poor sick and infirm, and in the management of the hospitals of the City of Boulevards. The improvements are many in Paris. The outdoor sick relief has been extended and remodeled; the study of our "excessive" ventilation (to use the words of the French authorities) has not been fruitless; the number of hospital beds has been greatly increased;* and the system of medical statistics has been so successfully established that it has been imitated in Belgium, and will extend to all the medical centres of the Continent.

---

* Increase from 1852 to 1859, 404 beds; from 1859 to 1867, 673 beds: increase in fifteen years, 1077 beds.

The idea with which M. Armand Husson sent his two commissioners to London fifteen years ago, would have given admirable results before this had it been followed up and applied to the philanthropic and scientific activities of other centres, and been ripened to the establishment of a permanent international medical commission. But the report which MM. Blondel and Ser presented remains an isolated document, little known beyond the regions which the Paris Assistance Publique governs.

Before reviewing the improvements in the Paris hospitals and in the home-treatment of the sick poor, let me note the salient points of difference, to our advantage or disadvantage, which the two French scientific travellers discovered between the hospitals and infirmaries of Paris and London. The present moment is opportune. There is a stir among the Parisians in regard to the means of providing labor, and of raising the funds by which the hospitals and refuges—the *bureaux de bienfaisance* and *maisons de secours*—are supported, that may profoundly modify M. Husson's work, and test it to the utmost. The violent debates which Baron Haussmann's administration of the affairs of Paris has provoked, tend clearly to a *régime* other than that which gives an individual the power of raising and spending a sum not much under twenty millions sterling, in his own way. By the Haussmann expenditure, which has supplied the working classes conglomerated in Paris with wages to the tune of twelve thousand pounds daily during the last eighteen years, periods of ominous distress have been tided over; and the Assistance Publique has been able to cope with the number of the indigent and sick poor. But it is now pretty clear that the twelve thousand pounds per diem of wages artificially raised for the prevention of *émeutes* will be sensibly diminished, and that therefore the department in the Avenue Victoria may fairly anticipate an increased demand on its resources as near at hand. It is unfortunate that at this moment the tax for the poor, which has, with divers modifications, existed since 1669, should be threatened by the combined hostile action of French theatrical managers and journalists. The origin of the law which taxes amusements for the benefit of those whose only rejoicing is a cessation from pain or hunger is brought forth to heighten its unpopularity. It was not originally instituted in a philanthropic spirit, but was imposed by a bigoted Court in hatred of the author "Tartuffe." Hence, according to French managers and journalists, the tax laid on the theatre for the benefit of the poor should be abolished as a bad remnant of the past. The logic of the Paris managers, who have ruined themselves with spectacular excesses, and by compliance with the extortions of actors and singers, does not, as our neighbors have it, jump to the right. Take the instance of M. Marc-Fournier, who has been fifteen years the manager of the Porte Saint Martin Theatre. During these fifteen years, it seems, his receipts have exceeded fourteen millions of francs, and out of this sum he has paid a tax for the hospitals, and refuges, and poor of Paris generally, exceeding one million francs in amount. But herein is no valid argument against this poor tax. A manager who takes a Paris theatre calculates, or should calculate, *with* the tax. It is as much part of his expenditure as his rent; and surely it is a just and wise tax, for it is levied exclusively on those who are not only able to live, but have a superabundance for amusement. What would the Parisians say if this system of laying a tax upon a luxury, for the benefit of those to whom necessaries are luxuries, were suddenly exchanged for ours, and the fifth, thirteenth, eighteenth, and nineteenth arrondissements were to be severally and separately rated for the support of their poor?

In the most interesting history of the Hôtel Dieu (the rebuilding of which is progressing apace) we find numerous instances of that just spirit which claims for the poor from the pockets of the rich; of which the theatrical poor-tax and the poor-tax on the rich man's grave are remaining examples. The right which the poor have to levy something upon the market dainties of the wealthy dates five hundred years back. It would seem that there was a gentler feeling abroad among the powerful in the fierce old times, in regard to the utterly destitute, than prevails in this later day of general rights. That which is specially kindly, for instance, in the treatment of the indigent and sick poor of Paris, comes to them from centuries ago: the harsher lines are drawn by modern hands. In France, the La Rochefoucauld-Liancourts, the Montyons, Brézins, and Boulards have kept a kindliness grafted on the Assistance system, which was brought into something like order and a code by Count Frochot; so that when we come to anything like a juxtaposition of the manner in which funds for the poor are raised in England and France, to the relief of the indigent and of the sick poor, and to the public sentiments in regard to the destitue—young, aged, and sick,—we are struck with the order and high-mindedness, and the tender heart which purveyed the operations of the Assistance Publique of Paris, and the coarse feeling, the confusion, and consequent inefficiency which characterize our London operations (viewed generally) for our extraordinarily diffused destitution, our legions of sick paupers, and our lanes and alleys of famished and tattered children, left as wild as squirrels in a wood.

The mission of MM. Blondel and Ser was, it may be remembered, provoked by the discussions which took place amongst the medical profession of Paris while the plans for the reconstruction of the Hôtel Dieu were under consideration, and under the sting of assertions made by high authorities that the hospitals of Paris were perhaps the most detestable medical establishments in Europe. The Lariboisière was the only modern hospital in the French capital. The London hospitals and infirmaries were cited as the examples which should be followed. M. Husson's Commissioners visited nineteen hospitals and four workhouse infirmaries. Their descriptive note on our workhouses shows what a perplexing place an English union is to the orderly, system-loving French mind:—

> "Workhouse: a kind of mixed establishment, which partakes of the character of a *depôt de Mendicité*, a *maison de secours*, the *hôpital*, and the *hospice*."

They were perplexed with the varieties of our hospital and workhouse and private administrations for the benefit of the poor and sick, and they concluded that, although the governors of the French systems for hospitals and asylums might find instructive matters of detail in England, the Assistance of Paris had nothing to fear from a general comparison with either the State or private methods of sick poor relief as practised in England. The radical difference between the English and French systems of relief that struck the French commissioners, at the opening of their labors, was that in England private charity is chiefly directed to establishments for the benefit of the sick, leaving the relief of the indigent to the parochial rates. They were surprised to find that all the London hospitals and dispensaries were privately supported and separately governed, and that it was by the accumulation of gifts from philanthropic individuals that little dispensaries grew to the proportions of first-class hospitals. The independent conflicting plans and regulations of so many irresponsible private bodies are utterly perplexing to the French mind. The elaborately governed Frenchman cannot understand how establishments so vast and so important in their effects on the indigent population can be left without the limits of our Poor-law control, and, indeed, unconsidered among the public means for coping with our great national misfortune. French and English hospitals have had a common origin. Private benevolence is the corner-stone of them all: as it is, in France at least, of the Assistance Publique. But the hospitals of Paris, despoiled in many cases of the private property and revenue which belonged to them, have been drawn into the keeping of the State, or rather into municipal keeping. The hospitals of Paris, to take an instance, possess property which is equal to only three-twentieths of their expenditure. In Paris charitable people are not prone to gifts in favor of the sick poor, but rather to works for the benefit of the aged and infirm, the desolate young, and the simply indigent. In short, the private charity of Paris is directed to the homes of the poor, to the bedside of the sick man lying in his garret, to the acts of the Sister of Charity, rather than the liberality which gives no greater personal trouble than the signing of a cheque. The Parisians, knowing that the chief part of the funds for their great hospitals is derived from the municipal purse, regard them as open establishments on which the sick poor have something like that claim which the English pauper has on his parish. The public mind is therefore at ease as to the means which the unfortunate have of obtaining medical treatment at any time. In the history of French hospitals will be found the names of many munificent donors (the latest in the list is Madame de Lariboisière*). But their increase under municipal protection, and chiefly by municipal support, tends to remove them more and more every year from the reach of private charity, and to leave more abundant private effort for the comfort of the poor sick at the command of the Assistance Publique.

Parisian charity, diverted from the hospital subscription-box, has, however, lingered by the hospital gates—has given a crutch to the infirm, a cradle to the foundling, and pure air and creature comforts to the poor and convalescent. When, a few days ago, I was going through the spacious galleries of the Magasin Central, on the Boulevard de l'Hôpital (of which more presently), I came upon stacks of neatly folded bundles of linen. "The Montyon gifts," said the military-looking *chef* of the gallery.

Now, these Montyon gifts, brought as they are to work harmoniously with the general administration of the hospitals, have effected and are effecting a vast amount of good. Such benefactors as the Devillas, the Lambrechts, the Simonins, and others of equal pretension, have done great good to their fellow-citizens by subjecting their individual benevolence to the governors of the general plan. We are only now waking to a very old fact, that enormous sums of money, bestowed in the noblest spirit by the charitable, are wasted in London and in other great cities of England, because there is no general government of charity. There is no guide, no harmonious action towards certain ends admitted by public opinion to be desirable. When I have watched the whitebait patrons of Greenwich sitting at the windows overhanging the mud-bank of the river, and throwing clouds of pence to the hungry little urchins below for the pleasure of seeing them scramble in the dirt, I have thought of the customary thoughtlessness and clumsiness with which formidable sums of money are cast forth in after-dinner atmospheres every London season. The Frenchman wonders at, and admires, our open-handedness, but despises our waste and disorder. We find the first remark which the French Hospital Commissioners made on getting amid our hospitals, dispensaries, and workhouse infirmaries, is, that our institutions are a jumble. The philanthropists are many: but each one, unconscious of his neighbor, is straining every nerve and muscle to tug the world in his own direction.

MM. Blondel and Ser remark that the charitable institutions of England and France had a strong original family likeness. The starting point of the difference (the actual development of which I am about to place before your readers) is fixed by the laws of Vendémiaire and of Frimaire, in the fifth year of the Republic, which form the foundations of the Assistance Publique law of France. According to these laws, of revolutionary origin, each commune of France is bound to the utmost of its means to provide for its poor, its sick, and its infirm, under the gratuitous surveillance of local notabilities acting within the control of municipal authority. All hospitals and asylums, since the passing of these laws, are subject to a series of general rules, which, without infringing on the fundamental characteristics of private charities, give a cohesion to the gifts of isolated philanthropists, and enable people of position in each commune to apply both the municipal and private relief resources in the most efficacious manner.

The French Assistance fuses our State relief and private charitable institutions into one powerful organization that administers every conceivable form of relief: that carries the foundling to the public nursery in the Rue d'Enfer, that governs the Maison de Secours, which is again governed by the Bureau de Bienfaisance; that personally investigates every application for help, and carries to the home of the deserving poor every necessary, from bread and blankets to wooden legs; that succors the aged and infirm at home or at Bicêtre, or the Salpêtrière; and that preserves in vigorous activity and growth hospitals that freely treat every ill that flesh and blood is heir to, and comprehend medical schools the fame of which reaches over the world.

---

* The gift of this lady was to the extent of £80,000 towards the fine hospital which bears her name.

No. II.

French hospitals being all, more or less, State institutions, supported by municipal funds as well as private acts of charity, incur a responsibility towards the public which is not borne by English hospitals. In the same way, the home relief of the sick as well as of the poor, being the operation of a mixed action—viz., that of an administration supplemented by the efforts of charitable ladies and gentlemen,—is uniform, constant, and unattended with those laxities which from time to time provoke the indignation of the English public. Whenever the English Poor Laws are publicly discussed, fifty complaints arise among the administrators and executive officers of the Poor Law, the public that pays, and the public that is relieved. In Paris, disposed as the Opposition in the Corps Legislatif is to pick holes in Napoleon's purple, there has been no attempt to attack the Assistance Publique administration. The theatre poor tax has redoubtable enemies; but there are no discontented poor-law officers; there are no good and bad arrondissements; no execrably managed maisons de secours; no overworked medical officers; no neglected cases nor slovenly dispensing, nor conveyance of fever patients in the first cab at hand. I shall describe a maison de secours, in its relation to the poor of a section of an arrondissement; to the hospitals; to out-door medical relief, and in its admirable internal economics, conducted by intelligent sisters, who have a mission as well as a wage—Christian charity as well as the means provided by the Assistance Publique. These maisons de secours, I may state at once, are so many well-ordered dispensaries, well worthy the attention of those politicians who are anxious to get at something like a sufficient, well-knit Poor-law code. They work in harmony with the distributors of out-door relief on the one hand, and with the hospitals on the other, and under that which is entirely absent from the English system —viz. "constant, intelligent inspection." Within the Assistance, I find no barristers—nephews of "one of us"—appointed to report on the infirmaries for the aged and the nurseries for orphans. The fitness of the individual for the office is a point which is an imperative necessity to the French mind; and it springs from that respect for ability which pervades all classes of Frenchmen, and makes a Nélaton a household name under the eaves of the humblest. He is surgeon and senator; and applauded because he doffs his embroidered coat to reach the sick man's bed. Shall we see a Lord Chancellor on his death-bed attended by a brother peer M.D.? The question is at the bottom of much more than the average philosopher can comprehend. All the controversies about Poor-law administration might be resolved into it How is it that, although it has been shown that 72 per cent. of the pauperism of England proceeds from the neglect or maladministration of the poor sick, they are still neglected or maladministered? Dr. G. Wallis gave this evidence to a Select Committee of the House of Commons in 1854; and yet, fifteen years afterwards, we find that the capacity for mismanagement, for which Gwydyr House is famous, remains concentrated upon the medical departments of the Poor-law administration. The cause of 72 per cent. of your pauperism is untouched. Even in the matter of Mr. Hardy's Act the authorities are true to the traditional obstinacy and dunderheadedness of their department; and the dispensary languishes while the asylum foundations are hastily laid. Yet the dispensary lies at the root of the evil: would help to block the way of the unfortunate from the sick bed to the workhouse, and so lessen the 72 per cent; while the asylum is but Bicêtre and La Salpêtrière, and the Incurables-Hommes and the Incurables-Femmes over again, with the Depôt Mendicité bungled and superadded. These places are retreats for society's utter failures. Victims of our social plan indirectly, if also culpable individually through their vices, the aged and infirm of society, who are helpless and have nothing, command public compassion. Whether this compassion should be expressed in the shape of country asylums is a matter on which, I think, some light will be thrown by the experiences of M. Husson's department. But the importance of advancing to the assistance of the poor man in sickness must be plain to all who have been at the pains of noting how the ranks of the poor are recruited. Protect the aged paupers; but, above all, so help the young in sickness that they shall not fall into hopeless poverty. In the regulations of the Assistance Publique of Paris, in regard to the sick poor, this primary and fundamental rule of Poor-law economy is kept steadily in view. They fortify, in a remarkable manner, the line of argument and the significance of the array of facts contained in the late address of the President of your Poor-law Medical Officers' Association. These regulations, as they have been lately amended I am enabled, through the courtesy of the Directeur-Général, to lay before your readers. I shall deal first with the out-door relief of the sick poor.

The latest report issued from the Avenue Victoria describes the out-door relief of the Paris sick poor during 1865-6-7, or the sixth, seventh, and eighth years during which the reorganised system has been in operation. Relief to the sick, the Directeur-Général states, is liberally applied throughout the capital, not only to the indigent population, but also to those whom forced cessation from work, or slack time, has thrown into temporary distress. The poor who prefer home treatment to removal to the hospital are encouraged in this preference; which denotes a resolve to avoid the breaking-up of the *ménage* and the decline from independence to State relief. We shall see presently how, on the other hand, the Assistance deals with the sick in the hospitals, who will occasionally lay deep plans for getting into one of the sick asylums for life, while their friends are perfectly able to maintain them. The desirability of discouraging recourse to the hospital, and of helping the poor to keep the home together, is the mainspring of all the recent Assistance reforms. Of late, a new regulation has been drawn up for a home midwifery service, in order to discourage mothers from the old bad habit of being confined in the hospital. Its success has been steady. In 1865-6-7, more than

23,000 women were attended in their own homes by the mid-wives of the Bureaux de Bienfaisance—namely, 7450 in 1865, 7588 in 1866, and 8744 in 1867. In this latter year 6506 of the mothers attended at home received relief as well as attendance, more than half the relief being in the shape of bed and baby linen. Midwives have always been attached to the Bureaux de Bienfaisance; but until the recent reforms came into operation they had few patients. It has been deemed radically economical to devote a special sum of money (£6000) annually to the encouragement of midwifery cases at home by extra help. The Assistance gains in the end. The home of the necessitous mother is kept together. The midwife receives 8 francs for each case. When the mother is in a position requiring relief, the bureau of her quarter is bound to extend it to her to the amount of at least 12 francs. The value of this timely help is forcibly shown in a table, which sets forth that two-thirds of the women who have recourse to the midwife of their bureau are only temporarily necessitous. When this table is compared with the figures of the general sick poor who have recourse to the Assistance medical staff, it will be perceived that among the working poor the period of the wife's confinement is specially severe. 44 per cent. of the general sick poor who apply to the Bureaux are inscribed on the books of the Assistance as paupers. Another table justifies the reforms made by the Assistance. About 85 per cent. of the poor women who are gratuitously helped through their hour of trial have their own furniture—a sure mark of good conduct, and honorable effort to keep clear of State relief and the ultimate poor asylum. The needlewomen of Paris form the great majority of applicants; and in the latest statistics the single mothers attended amount to one-fifth of the total.

It is proved that the women who are confined at home are morally and physically superior to those who resort to the hospital; and that the poorest home, where the mother is alone with her child, is safer than the best regulated hospital. The figures of the home attendances of the Bureaux midwives are interesting. In 1867, of 8744 women confined, 5 died within the nine days; only 327 required medical treatment for the results of their confinement; 24 died; 23 were conveyed to the hospital; and 5 died in hospital. The average cost to the Assistance of each case is a fraction under 21 francs. The number of midwives (whose services are supplemented by the Bureaux doctors when necessary) in the pay of the Assistance is 111, making the average number of cases 78 each; and the fees nearly £25.

In 1867, the number of the poor sick attended in their homes reached 66,486, to 3·09 of the population. Of these, 74·49 were discharged cured. The average duration of sickness was 14 days. In this year the Bureaux medical attendants gave 355,089 consultations, showing an increase of 31,103 consultations in three years. The average cost per patient is set forth at a fraction under 5¼ francs.

Summing up the effects of the liberal extension of the home treatment of the sick poor, M. Husson declared, last July, that they were most satisfactory and encouraging; and would nerve the Assistance to greater efforts towards the perfection of a plan, the germ of which was the idea of keeping poor working families off the Bureaux books, by helping them freely in that most critical hour in the lives of those who live by labor—the hour of sickness, when the expenses are suddenly increased, while the revenue is sensibly diminished or completely stopped. The best proof of the wisdom of the new regulations is, that the majority of the cases treated by the Assistance doctors are those of honest workfolk who are strangers to the taste of Assistance bread. The patients relieved are parted into two categories—the *indigents* and the *neccessiteux;* the former being, of course, the chronic paupers. In 1867 the sick *indigents* who were attended amounted to 24,987; and the *necessiteux*, many of whom might have lapsed into chronic pauperism but for this timely help to 30,647. The value of this fact to a poor-administrator of M. Husson's experience and sagacity is not lost. These sick *necessiteux*, who have been tided through a difficult passage of their lives, remain independent citizens. Many, had they not been enabled to keep home together, would now be on the books of a bureau; and, once on those books, a family is broken for many a long year.

The Assistance has a classification of the poor which is excellent. The recipients of relief are divided into those who have their own furniture, and those who have neither bed nor table of their own. The last are a hopeless class. They comprehend the vagabonds and ne'er-do-weels; the drunken and dissolute; the shiftless, unskilful workers; the unclassed who have fallen from various altitudes of the social ladder by the hundred accidents which befall men and women in a complicated and crowded artificial life like that which is encompassed by Louis Philippe's fortifications. When the unfurnished class of *indigents* are on the increase, trade is bad, life is hard, and misery is penetrating into new places. In 1867 the number of sick poor without furniture, and dwelling in the *garnis* of the outlying parts of Paris, increased. In the 19th arrondissement (a Parisian equivalent for Bethnal Green) the poor without chattels were more numerous than the poor with their own beds. The 20th arrondissement, to which the nomadic population of the city and the expropriated poor tend, shows the same mark of deep distress. The increase of the poorest class has been steady during the last three years on which reports have been issued. In 1865 the poor living in unfurnished rooms were 85·28 per cent.; and in 1867 they were but 81·59 per cent. The indigent population of Paris is composed of common laborers, porters, shoemakers, bricklayers, washerwomen, servants, and needlewomen. The labor to which the unskilled and unclassed have recourse is that, of course, which yields the lowest wage, and just maintains the animal functions. The least trade depression casts crowds of these dwellers on the verge of pauperism over the precipice. The few sticks of furniture vanish, and the man is naked as he was born; in a slack labor-market, with only untutored hands to offer in it. When the depression continues and deepens, the lower class of skilled artisans falls to the *garni.* The increase of furnitureless poor is an unerring sign of the spread of absolute pauperism.

The sick poor of Paris are a fraction over 3 per cent. of the inhabitants within the twenty arrondissements. Of the 51,833 who were visited by Assistance doctors in 1867, 20,413 were discharged convalescent, 18,201 were sent as out-patients to the maison de secours of their quarter, 1011 were incurable (subjects for one of the asylums), 3508 were conveyed to the hospitals, 3545 are marked as refused for various reasons, and 5155 died. The decrease in the average of deaths between 1865 and 1867 is from 10·36 per cent. to 9·95: but the cholera of 1865 and 1866 must be taken into consideration. The average of deaths amongst the sick poor inscribed on the Assistance books as treated at home from 1854, the date when this service was first reorganized, is interesting.

	Patients.	Deaths.	Per-centage.
1854	28,076	2,722	9·65
1855	29,483	2,393	8·12
1856	30,346	2,248	7·41
1857	29,669	2,183	7·36
1858	27,724	2,033	7·33
1859	25,299	2,074	8·20
1860	33,890	2,888	8·52
1861	44,191	3,745	8·47
1862	47,102	3,723	7·91
1863	50,047	4,078	8·15
1864	52,246	4,476	8·58
1865*	50,539	5,238	10·36
1866*	52,756	5,441	10·31
1867	51,833	5,155	9·95

Again, in the assistance tables the sick poor list is broken up into the number of days of illness. The days of sickness amongst the poor which the Bureaux doctors directed in 1865 were 834,734; in 1866, 797,116; and in 1867, 795,269. M. Husson reckons that these days of sickness, treated at home, saved 2287 hospital beds in 1865, 2184 in 1866, and 2179 in 1867. The average duration of sickness was highest in 1865, and lowest in 1866: in the former year it was 15·7 days; and in the latter year 14·5 days.

We now come to the work of the medical staff. In 1865 there were 202 doctors on the home-treatment service, 204 in 1866, and 205 in 1867. Of these, 8 were exclusively engaged in receiving out-patients in the various maisons de secours. In 1865 the average of patients for each doctor was 274, 281 in 1866, and 277 in 1867. The figures are twisted many ways, in order to show the working of the system by every available light. In 1865, 203,393 Assistance doctors' home visits were made; in 1866, 199,577; and in 1867, 189,093. In 1865 the average number of visits made by each medical man was 1048·42; in 1866, 1018·25; and in 1867, 59·86. We have even a fractional *aperçu* of the average daily work of the doctors. In 1865 each doctor paid 2·87 daily visits; in 1866, 2·79 visits; and in 1867, 2·63 visits. The medical attention paid to each sick person is stated at three visits and the forty-sixth part of one!

The consultations in the maisons de secours have increased. This increase has diminished the home treatment, and consequently effected a saving. In 1865 the number of consultations at the maisons de secours in each arrondissement was 16,209; and in each maison de secours 5790. In 1866 the figures were 16,705 for the arrondissement, and 5968 for each maison de secours; in 1867 the arrondissement consultations had reached an average of 17,754, and the maison de secours average was 6340. As the Central Board of the Assistance distributes money to each arrondissement just in proportion to the number of paupers on its books, so it regulates the staff of medical officers by the number of the sick poor. For instance, in the flourishing second arrondissement there were only 625 sick poor cases in 1867. These were attended by six doctors. Each doctor on an average attended 104 patients in the year, and made 597 visits. The medical staff is not so exactly disposed as to give every Assistance doctor the same work; but the balance is kept roughly so that none are overworked. In the eleventh arrondissement I find the medical staff strongest, although the sick poor list is lower than that of the twentieth and nineteenth. The eleventh arrondissement employs 13 doctors in the home treatment of the sick poor, and has 3 medical men exclusively occupied with consultations at the maisons de secours; the fourth arrondissement has 14 doctors and 1 medical officer for consultations; while the twentieth arrondissement has just 12 doctors, although its sick list reached 6482 in 1867, as against the 4970 of the eleventh. In the twentieth arrondissement the average of visits paid in the year by each medical officer was 1739, and in the eleventh only 1250, while the averages were 1379 in the tenth, and 1311 in the fourteenth. The lowest average of medical work is in the third arrondissement, where the number of each doctor's visits is as low as 378. In the hardest-worked arrondissement, the visits do not exceed five a day, while in the lightest they are a fraction over one. By intelligent and steady distribution of work, nearly 200,000 attendances are given by the Assistance in the houses of the indigent or necessitous, without risking the neglect of a single patient through the overwork of the medical attendant. The medical payments are regulated by the visits paid. In the eleventh arrondissement, the medical fees for out-door relief amounted to 12,800 francs (£512), while the medical staff of the fourth received only 8925 francs (£357). The medical service of the heaviest (twentieth) arrondissement shows the lowest remuneration in proportion to the work done, being only 12,000 francs (£480). On the other hand, the heavy arrondissement spends most in the help the sick poor most require,—gratuitous diet, bedding, and baths. Taking the totals of expenditure on the home treatment of the sick poor, we find the largest in the twentieth arrondissement—viz: 69,180 francs (£2767 4*s*.), and the lowest, not in the account of the second, but in the seventeenth, arrondissement—viz: 18,329 francs (£773 3*s*.). But there are striking contrasts among the details. The money relief given to the 6000 sick persons of the twentieth arrondissement (I am treating always of 1867, the last return made) amounted to 2970 francs (£128 16*s*.) only; while the sum given to the 4900 sick of the eleventh arrondissement was 6395 francs (£265 16*s*.); to the 5000 of the nineteenth arrondissement, 7600 francs (£304); and to the 791 sick of the ninth, the largest sum in the table—viz: 9121 francs (£364 16*s*.) In some arrondissements, where the medical attendances are comparatively few, as in the fourth, the salaries for the sisters who are employed in the service of the sick, and the sick room visitors (who follow in the wake of the doctor, and report the time, &c., of his visit) are high. In the fourth arrondissement (a lighter one than the fifth, eleventh, thirteenth, or twentieth), the sisters receive 2400 francs (£88); and in the twentieth, 1800 francs (£56); but the salaries for paid visitors exceed in this arrondissement those in any other.

---

* The cholera years.

The cost of each patient for medicines is reckoned at 5 fr. 45 c. (4*s*. 4*d*.(; for help in money, food, or clothes, a fraction under 4*s*.: and the total cost per patient is set down at 14 fr. 53 c. (11*s*. 8*d*.)

The general results are, I repeat, most satisfactory to the minds of the Central Committee of the Assistance Publique, who control the application of the poor laws to the poor of Paris. M. Husson, in closing his report on the new element in his administration, declares that it is a good one, for it meets the evil half-way. Its special advantage is that it tends to prevent the momentarily necessitous from falling into the slough of pauperism, out of which very few scramble when they have once slipped into it.

Reference to some of the Central Committee's regulations under which a Bureau de Bienfaisance conducts out-door relief is necessary in order to put the reader in possession of the dominant points of the system. The medical officers attached to the Bureau de Bienfaisance of each arrondissement are elected at a meeting of the members of the Bureau by ballot, and with the forms which govern the election of administrators, commissioners, or ladies of charity, who, albeit unpaid servants of the poor, are held strictly responsible for the fulfilment of their duties to the letter. Physicians, surgeons, and midwives are finally appointed by the Prefect of the Seine, from a triple list of names elected by the Bureau. The medical officers must reside within that part of the arrondissement to which they have to attend.* A change of residence beyond the limits of their trust without permission is regarded as an act of resignation. No medical officer can be an administrator of a Bureau, the Bureau being a judicial body over him. On the other hand, the members of a Bureau (of whom the mayor of the arrondissement is the president *ex officio*) have not the authority to dismiss a medical officer, or even to suspend him without a decree signed by the Prefect of the Seine. His dismissal is the act of the Minister of the Interior, on the recommendation of the Bureau to which he belongs, or of the Directeur-Général. He assists at the annual meeting of the administrators and commissioners of his Bureau; when a report to the Directeur-Général is prepared, including any observations he, or any other member of the meeting, may choose to make. Every member of the Assistance staff, from the chief to the humblest midwife, ranks as a public servant, and is eligible for promotion to the Legion of Honor, for services done to the poor.

It is the duty of the Bureau doctor to attend poor patients in their homes, and to dress wounds, limbs, &c., when the sisters of charity are unable from any cause to take this part of the medical service. But the rule is that the Bureau sister supplements the service of the doctor, nurses the pauper patient, prepares his medicine, and watches over his diet.

In each Bureau a register of the sick of the arrondissement is regularly posted, each sick person being watched over—1st, by the administrator of his division; 2d, by the doctor; 3d, by the sister of charity. The secretary-treasurer (the responsible person to the central authority) is bound to exact the regular exercise of the round of duties devolving on the administrator, the doctor, and the sister of charity, under the watchful eye of the inspectors of the central body. Moreover, there is the Bureau visitor, who visits every patient on the list, and reports on his state to the Sick Commission of the Bureau, consisting of the president, or a vice-president, an administrator, a doctor, a commissioner, and the secretary-treasurer. This Commission pronounces the convalescence of a patient, orders extraordinary relief, medicines, &c., or deals with cases of chronic disease which belong to the asylums, or forwards sick poor to the convalescent asylums of Vincennes or the Vesinet. I should remark here that the medicines used for the poor all proceed from the Central Pharmacy of the city, and all the clothing, bandages, crutches, &c., from the Central Magazine. The central provision establishments for the sick poor deserve a separate paper.

The Bureau machinery is cumbersome; but it is valuable in this, that every sick or valid person relieved comes directly under the eye of the Bureau. The relief is carried to the pauper home. A commissioner or lady of charity goes into the garret, sees the sick wife or husband and famished children, delivers the food or clothing warrant, and examines all the just requirements of the case. Even loans are made to sick nursing mothers, and to parents whose children are ill, and to convalescents in distress. The poor children who attend the free schools receive reward and encouragement in the sensible shapes of serviceable blouses and frocks, and payments for their apprenticeship. Poor apprentices are governed by a separate committee, composed of members of the Bureau, including visitors, who watch the children where they are employed. The poor apprenticeship system of the Assistance deserves, in brief, the attention of English Poor-law authorities. The burial of the poor is admirably organized; but the subject comes within the general one of central administrations.

News Items, Medical Facts, &c.

A Surgical Prize.—The Surgical Society of Paris has just announced the subject of the Laborie prize (£48), to be awarded in January, 1870:—"Point out by the aid of clinical facts, the actual value of supra-malleolar amputation from the following points of view: 1. The mortality consequent upon the operation. 2. On the different ways of performing it. 3. The usefulness of stumps in the ac of walking. 4. The artificial limbs best calculated fo these stumps."

Baron Anslem de Rothschild has given the sum of 200,000 florins for the erection of an hospital for Jews, to contain 100 beds, in Vienna.

PUBLISHED BY
Wm. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK

---

* The arrondissement is parted into four quarters, and these are each subdivided into three divisions. There is an administration for each division.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, JR., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 6. NEW YORK, JUNE, 1869.

Observations
ON
LIGATURE OF ARTERIES ON THE ANTISEPTIC SYSTEM.

BY JOSEPH LISTER, F.R.S.,

Professor of Surgery in the University of Glasgow, etc.

Various attempts have been made, both in the early part of the century and more recently, to improve the ligature, or to supersede it by other methods. Nevertheless, for obstructing the calibre of an arterial trunk in its continuity, no means hitherto devised have proved superior to a silk thread tied in a secure knot, with the ends left projecting from the wound. Yet, as is implied by the numerous efforts at improvement, the ligature in this form is far from perfect. The internal and middle coats are ruptured by the constricting noose, while a portion of the tough external coat is pinched together and deprived of its vitality. The dead tissue, becoming contaminated by putrefaction occurring in the interstices of the silk fibres, acts, together with the septic ligature, as a cause of irritation to the neighboring parts of the arterial wall, which consequently degenerate into an imperfect structure, inadequate to withstand the powerful cardiac impulse; and even before the slough separates by suppuration, the blood breaks through the feeble barrier, unless it be fortified by a firm plug of internal coagulum. Hence, if a considerable branch takes origin close to the part tied, the formation of a clot being prevented by the current of blood, secondary hæmorrhage is the inevitable consequence; and thus the ligature is inapplicable in situations otherwise eligible for it, such as the femoral artery near Poupart's ligament, the origins and endings of the iliacs, and the innominate.

Even when the thread is distant from any considerable branch, the terrible risk of hæmorrhage cannot be said to be altogether absent. The degenerate structure of the vessel near the ligature, unlike the arterial wall in its normal condition, is prone to ulceration, and the organising coagulum is similarly circumstanced; so that an unhealthy state of the wound may open up the calibre of an artery tied in the most favorable situation.[*]

Again, when the parts about the vessel communicate with loose cellular interspaces in important regions, as is the case with the iliac arteries or the subclavian, diffuse suppuration is frequently a cause of death. Finally, the cure is always rendered tedious by the time required for the separation of the ligature; while the presence of an external wound during the period thus protracted involves a risk, by no means inconsiderable in some localities, of hospital gangrene or erysipelas.

The Antiseptic System, however, places this branch of surgery, like most others, in a new light. One point which it has brought out in striking relief is that a portion of dead tissue is not necessarily thrown off by suppuration, but, unless altered by putrefaction or artificially imbued with stimulating salts, serves as pabulum for the surrounding living parts, which remove it by a sure process of absorption. Hence the death of a portion of the external coat included in the ligature does not of itself render it a cause of suppuration. And I conceived that if a silk thread, steeped in some liquid capable of destroying the septic organisms in its interstices, were tied round an artery, and left with short-cut ends in a wound dressed antiseptically,* the foreign body, soon losing, by diffusion into the circulation, the stimulating salt with which it was saturated at the outset, and being in its own substance as unstimulating chemically as a pellet of lead from a fowling-piece, would either remain, like the latter, permanently encapsuled, or itself experience absorption together with the dead tissue in its grasp. In either case, being destitute of irritating properties, it should leave the primitive strength of the arterial coats unimpaired; when the objection to tying near a large branch would cease to exist. The wound meanwhile would, under proper management, close rapidly, without any deep-seated suppuration, and would be efficiently protected against the evil influences of impure atmosphere. In short, the ligature of an arterial trunk in its continuity would be brought to a state of perfection.

---

[*] It has been long since noticed that hæmorrhage occurs more frequently from the distal than from the cardiac end of the vessel. This seems at first sight contrary to what might be expected, since the cardiac end is subjected to much greater strain. The explanation is, I believe, afforded by some facts which I had occasion some years ago to point out. (See the Croonian Lecture on the Coagulation of the Blood, Proceedings of the Royal Society, vol. xii., No. 56). It was then shown that a perfectly undisturbed coagulum resembles healthy living tissue in failing to induce coagulation in blood near it; but that, on the other hand, while a clot is, from its softness, peculiarly liable to laceration and other disturbance, a disturbed coagulum acts like injured tissue in impressing upon neighboring blood a coagulating tendency. Hence, when a ligature has been tied round an artery, although a minute clot necessarily forms upon the injured internal and middle coats, it would undergo no increase if the blood in the vessel were absolutely quiescent. But the pulsations of the artery operate as a disturbing cause to the clot already formed, which consequently increases in proportion to the degree of the disturbance; and as this is much greater at the cardiac side, the clot grows more quickly there, and forms a more secure barrier against the pressure of the blood.

I have subjected these theoretical views to the test of experience, and though the results have not turned out in all respects exactly as I had anticipated, yet those finally arrived at appearing satisfactory, I now present to the readers of THE LANCET an account of all that I have done in the subject.

Case of ligature of the carotid artery in the horse with silk thread, on the antiseptic system.—On the 12th of December, 1867, I tied the left carotid artery of a horse in the middle of the neck with a piece of "purse silk" saturated with a strong watery solution of carbolic acid, cutting the ends short and dressing the wound antiseptically. Healing took place without any supuration, and with remarkable absence of swelling or tenderness. Nearly six weeks after the operation I investigated the parts. On laying open the vessel, I found at the cardiac side of the ligature a firm adherent clot an inch and a quarter long; but at the distal side coagulation had been entirely prevented by the reflux current of blood through a branch about as large as the human vertebral, which took origin as close to the ligature as was possible. Under such circumstances secondary hæmorrhage would necessarily have occurred had the thread been applied in the usual way. Here, however, the artery appeared as strong at the part tied as elsewhere. The cul-de-sac showed indeed some irregularity, in consequence of the puckering of the internal and middle coats; but the surface appeared completely cicatrised, and presented the same character as the natural lining membrane of the vessel; and the ligature, which seemed as yet unaltered, was found lying dry in a bed of firm tissue; that within the noose being apparently a new formation, in place of the portion of external coat killed by the tightly tied thread; while, externally, the constriction necessarily caused in the first instance by the operation had been filled in by a similar compact structure.

Thus far experience had proved precisely in accordance with my expectations, so that I felt justified in carrying a similar practice into human surgery.

Case of ligature of the external iliac artery with silk thread, on the antiseptic system.—On the 29th of January, 1868, I tied the left external iliac artery in a lady, fifty-one years of age, on account of an aneurism of the upper part of the femoral, as big as a large orange, and reaching somewhat above Poupart's ligament. I was informed that it had existed for four years, growing more rapidly of late, and causing severe agony, which had made her keep entirely to bed for the last few weeks, and had deprived her of appetite, and reduced her strength. A silk thread was applied, as in the last case, except that it had been steeped for two hours in undiluted liquid carbolic acid instead of the watery solution, to make sure of the destruction of all septic organisms lodged in its interstices. The wound, being dressed antiseptically, became superficial without suppuration, the patient meanwhile experiencing no febrile disturbance, her appetite returning as soon as the sickness from chloroform subsided. On the fourteenth day she sat bolt upright in bed without inconvenience. Four weeks after the operation, the superficial sore became completely cicatrised, she was allowed to walk about her room; and just six weeks from the date of the application of the ligature, she went down three flights of stairs and walked for some time in the streets, and then up again to her room without over-fatigue. The aneurism was free from pulsation, and much reduced in size.

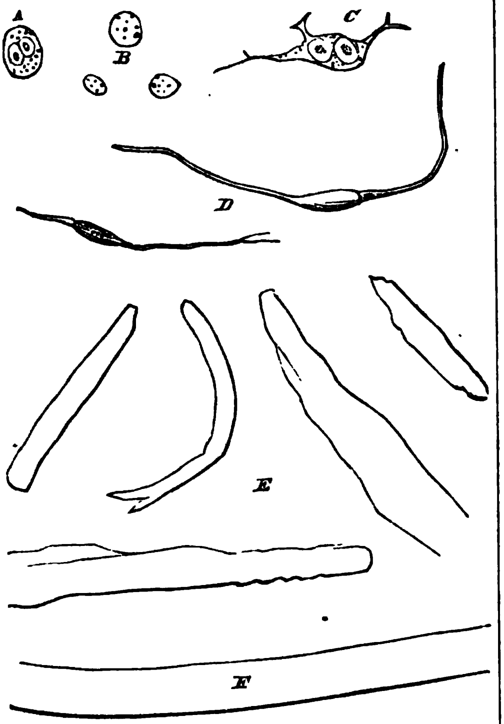
She continued for about ten months in fair health and strength; but, in the latter part of November, became affected with a peculiar spasmodic disorder of the respiration, and on the morning of the 30th of the month, while sitting up in bed, she suddenly exclaimed that something had given way within her, and that she was dying, and then immediately expired. Next day I made a post-mortem examination, when the idea which she had expressed proved correct,—an aneurism of the descending part of the arch of the aorta having given way, and discharged an enormous quantity of blood into the mediastinal and subpleural cellular tissue. The parts concerned in the operation having been removed and dissected, the following appearances were disclosed:—The aneurism was not entirely obliterated; but remained about the size of a cherry or large filbert, of somewhat fusiform shape. The upper two-thirds were solid, being occupied by firm coagulum incorporated with the sac. The lower third, situated just at the bifurcation of the common femoral, had been kept free from coagulation by the regurgitant stream of blood from the profunda into the superficial trunk. This part of the sac appeared constituted by the wall of the vessel, very slightly distended. The external iliac artery was considerably shrunk throughout, and tapered from each end to near the middle, where it was only about a twentieth of an inch in diameter. In the greater part of its length the structure of the dwindled vessel could be distinctly recognised, with adherent coagula in the interior, decolorized and otherwise altered. But at the narrowest part the artery was reduced to mere fibrous tissue, constituting a dense white band five-eighths of an inch long, from the middle of which was seen projecting at one side a round, buff-colored appendage about a line in diameter, somewhat obscured by a trifling amount of inflammatory condensation of texture in the immediate vicinity. On scratching this little body with the point of a knife, I found it to be a very thin-walled capsule, containing the knot of the ligature, with two tapering ends, which were shorter than the thread was cut at the operation, while the noose had vanished altogether. The surface of the knot also showed clear indications of having been subjected to an eroding agency, similar, no doubt, to that exerted by granulations upon dead bone absorbed by them. Besides the remnant of the ligature, the tiny capsule contained a minute quantity of yellowish, semifluid material, looking to the naked eye like very thick pus. Under the microscope, however, pus-corpuscles were seen to form but a small proportion of its constituents, which were principally rounded corpuscles of smaller size, and fibro-plastic corpuscles, together with some imperfect fibres and granular material. In addition to these elements were some which at first puzzled me; but which turned out to be fragments of silk fibre, of various lengths, and of jagged, tapering, or otherwise irregular forms, and many of them greatly reduced in thickness, contrasting strongly with the uniform bands of a fresh piece of silk from the same reel that had furnished the ligature. (Fig. 1.)

---

* In using the expression "dressed antiseptically," I do not mean merely "dressed with an antiseptic," but "dressed so as to ensure absence of putrefaction."

Mingled with the puriform fluid were also some delicate filaments of silk, visible without the microscope; and these seemed to retain their natural elasticity. Nor was there anything about the more minute pieces into which the fibres had been so strangely chopped up, to indicate that they were undergoing a process of solution or softening by the fluid that soaked the thread. They had rather the appearance of having been superficially nibbled, so to speak; confirming the impression conveyed by the naked-eye characters of the knot, that the silk had been eroded by the absorbing action of the surrounding parts. Indeed, considering the organic origin of silk, the remarkable thing seems to be, not that it should be absorbed by the living tissues, but that it should resist their influence so long.

Fig. 1.



Constituents of the incipient abscess (?) around the remains of the silk ligature. Magnified 500 diameters. From a camera lucida sketch. A, A pus-corpuscle. B, Rounded corpuscles of smaller size. C, Fibro-plastic corpuscle with endogenous cell-development. D, Ordinary fibro-plastic corpuscles. E, Irregular fragments of silk fibre partially absorbed. F, A piece of fresh silk fibre introduced for comparison.

Why it was that the parts in immediate contact with the silk should have assumed so imperfect a structure is a difficult question, but one of great interest: because, although that structure could not be called pus, it was certainly a very near approach to it: and it is impossible to say that we had not here an incipient abscess. There can be no doubt that the presence of the thread was in some way or other the cause, and I think we can hardly be wrong in assuming that, in order to give rise to such degeneration of tissue, it must have operated as a persistent, if trifling, source of abnormal stimulation. Now, as putrefaction is here out of the question, and as the substance of silk is not chemically stimulating, we seem shut up to the conclusion that the thread must have occasioned disturbance of a mechanical nature. Further, the effect in question seems to be essentially connected with the disintegration of the silk. For in the horse's carotid the silk ligature, having remained unaltered during the six weeks that had passed after the operation, was found surrounded on all sides by compact tissue; and in the present case, so long a period as ten months having elapsed before the puriform condition was observed in an apparently incipient stage, it is probable that the thread had lain for a long time inert, producing irritation only when partially absorbed. If, then, we inquire how the disintegrating silk could prove a source of mechanical irritation, it seems not improbable that it may have been from the sharp and jagged fragments of the fibre perpetually fretting the leements of the living tissue around them. This view, if correct, would explain the curious fact observed by Lawrence and others, that when fine silk ligatures had been left with short-cut ends in a stump, though the wound might heal without their separation in the first instance, they were liable to make their appearance subsequently, sometimes at so late a period as seems to exclude the idea of putrefaction having occurred from organisms introduced in the threads. Indeed, such ligatures occasionally showed themselves encapsuled in little nodules in the cicatrix, without suppuration occurring at all. In other words, the apparently soft silk, instead of remaining like a smooth leaden pellet permanently imbedded in the place where it was first introduced, made its way to the surface, with or without suppuration, like a sharp spiculum of rigid glass; the silk being in its minute structure comparable to the lead when in the primitive condition of smooth continuous fibres, and to the glass spicula when in the form of jagged fragments as the result of partial absorption.

But whatever may be thought of this explanation, it is clear that if there is any chance of silk, though used antiseptically, giving rise, even in exceptional cases, to abscess in the vicinity of an artery tied with it, this is a serious objection to its employment; and as the near approach to suppuration in the present instance was undoubtedly occasioned by the persistent presence of the thread, the case, while interesting as affording evidence that silk is susceptible of absorption, suggests the expediency of substituting for that material some other substance which can be more readily taken up by the tissues.

The use of "animal ligatures," of cat-gut, leather, or tendon, was long since tried and abandoned as unsatisfactory; but after the experience which the antiseptic system has afforded of the disappearance, without suppuration, of large dead pieces of skin and other textures, there could be little doubt that threads of animal tissue, if applied antiseptically, would be similarly disposed of.

And even if chemical processes should have been used in preparing such threads, it did not seem likely that this would interfere with their absorption; for I knew that the free action of carbolic acid on blood and sloughs had no such deterring influence, and I have long been satisfied that the injection of a strong solution of perchloride of iron or tannic acid for the cure of nævi produces subcutaneous sloughs, which are imbued with the ingredients injected, and yet disappear, as a rule, without the formation of pus.

In order to put the antispeptic animal ligature fairly to the test, I made the following experiment:—

Ligature of the carotid artery in the calf on the antiseptic system, with threads composed of animal tissue.—On the 31st of December, 1868, I tied the right carotid artery about the middle of the neck in a healthy calf a few days old, the animal being under chloroform. Ligatures of two different kinds were employed, at an interval of about an inch and a half, the sheath of the vessel being left undisturbed in the intervening part. The cardiac ligature was of home manufacture, composed of three strips of peritoneum from the small intestine of an ox, firmly twisted together into a threefold cord. The distal thread was of fine catgut, called "minikin gut" by the London makers. Both had been soaked for four hours in a saturated watery solution of carbolic acid, which swelled and softened them, so that the thread of my own making was too large to enter the eye of the aneurism needle except near the ends, where it was thinner than elsewhere. This substantial ligature bore the strain of tying well, but the fine catgut broke as I tightened the noose. I did not, however, remove it, but having a second piece at my disposal, passed it round at the same place, and with gentle traction completed the knot. There were thus two ligatures of the fine gut at the distal side. All were cut short, except one end of the catgut, which I purposely left about three-quarters of an inch long, to give a better opportunity of ascertaining what would become of the foreign material. The antiseptic arrangements were as follows:—Before the operation the hair of the part was cut short, and a solution of carbolic acid in four parts of linseed oil (preferred for its cheapness) was rubbed well into the skin, to destroy any putrefactive organisms lying amongst the roots of the hairs, for any so situated might escape the action of the external antiseptic dressing, and communicate putrefaction to the discharges, and thence to the interior of the wound. The sponges used in the operation were wrung out of a watery solution of the acid (1 to 40), and all instruments introduced into the wound, together with the fingers of my left hand and the copper wire used for sutures, were treated with the same lotion, some of which was poured into the wound after the introduction of the last stich, at one of the intervals left for the escape of discharge, to make sure against the chance of any fresh blood which had oozed out during the process of stitching having regurgitated and taken living germs in with it. The external dressing was a towel saturated with the oily solution, folded as broad as the length of the neck, round which it was wrapped so as to extend freely beyond the wound in all directions, prevented from slipping backward and forward by being stitched to a halter round the head, and to a girth behind the forelegs, while a bandage rolled round it kept it applied accurately to the surface. A sheet of gutta-percha tissue, to prevent contamination of the antiseptic towel from without, and another roller, completed the dressing; and a "cradle" was placed upon the neck to check lateral movements which might disturb it. I have described these particulars because I am more and more convinced of the necessity for scrupulous attention to details such as the germ theory dictates, in order to attain anything like uniformity of successful results.

A few ounces of the oily solution were poured daily over the towel for the first week, after which the dressings were left untouched for three days, and then entirely removed. The wound was found quite dry and free from tenderness, and the cloth showed only a superficial bloody stain. The stitches being taken out, a drop of pus escaped from the track of the suture next the head, but this was the only appearance of suppuration in the case from first to last, and on the separation of the scab, a few days later, a sound cicatrix was disclosed. A month (thirty days) after the operation the animal, which had continued in perfect health, was killed, and the soft parts of the neck below to the spine were removed for examination. On dissection I was struck with the entire absence of inflammatory thickening in the vicinity of the vessel, the cellular tissue being of perfectly normal softness and laxity. On exposing the artery itself, however, I was at first much disappointed to see the ligatures still there to all appearance as large as ever. But had I borne in mind what I had observed in some of my earlier cases of compound fracture treated antiseptically, I should have been prepared to find these threads present in appearance, though absent in reality. It may be well for me to quote from the account I have before given of one of these cases. It was a compound fracture of the leg, produced by direct violence, with a wound of considerable size, and a great deal of extravasation of blood into the limb. In accordance with the practice which I then followed, a piece of lint soaked with undiluted carbolic acid had been placed over the wound, and had formed with the blood a firm crust. "Nearly three weeks after the accident I was detaching a portion of the adherent crust from the surface of the vascular structure into which the extravasated blood beneath had been converted by the process of organisation, when I exposed a little spherical cavity about as big as a pea, containing brown serum, forming a sort of pocket in the living tissues, which when scraped with the edge of a knife, bled even at the very margin of the cavity. This appearance showed that the deeper portions of the crust itself had been converted into living tissue. For cavities formed during the process of aggregation, like those with clear liquid contents in a Gruyère cheese, occur in the grumous mass which results from the action of carbolic acid upon blood; and that which I had exposed had evidently been one of these, though its walls were now alive and vascular." Thus the dead, but nutritious mass had served as a mould for the formation of new tissue, the growing elements of which had replaced the materials absorbed, so as to constitute a living solid of the same form.

Hence it might have been anticipated that the ligatures of peritoneum and catgut placed on the calf's carotid would, after the expiration of a month, be found transformed into bands of living tissue. Such was, in truth, the case, as was apparent on closer examination. They had, indeed, a deceptive resemblance to their former condition from the persistence in their substance of the impurities of the original materials, the dark adventitious particles being of mineral nature incapable of absorption, so that they had remained as a sort of tattooing of the new structure. Nevertheless, a marked alteration in color had taken place, especially in the distal ligature, where the dirty-grey of the softened catgut had changed to a dirty-pink tint. The two pieces of catgut which had been tied round the vessel at that part had become, as it were, fused together into a single fleshy band, inseperably blended with the external coat of the artery. The knots were nowhere discoverable, and the only indication of the end which had been left long at the time of the operation was the presence of a black speck here and there upon a delicate thread of cellular tissue in connection with the vessel. The cardiac ligature was in like manner continuous in structure with the arterial wall. The short cut ends had disappeared; but the massive knot was represented by a soft smooth lump, which appeared at first entirely homogeneous, except that it was speckled with dark particles, as before referred to. On section, however, I discovered in the interior of the mass, and lying close to the wall of the artery, a small residual portion of the original knot, of comparatively firm consistence, and with the three-fold twisted character of the cord plainly visible. It was quite distinct from the living tissue that surrounded it, so that it could be readily picked out from its bed with a pair of needles. A slender and irregular remnant of the noose was also found lying in a sort of tubular cavity, extending about half round the vessel.

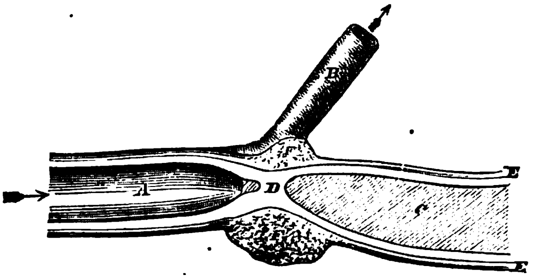
Thus the process of organisation had not yet quite invaded the entire thickness of the foreign solid, and it was a happy circumstance that the cord had been so constructed that the distinction between the old structure and the new could be plainly recognised.

Ample as was the evidence afforded to the naked eye of the organisation of these ligatures, it was satisfactory to find it confirmed in the clearest manner by the microscope. A bit of the knot, having been teazed out with needles in a drop of water, presented, like a fresh piece of peritoneum, the wavy bundles of parallel fibres characteristic of perfectly developed fibrous tissue. Adhering to the surface of the remnant of the ligature was some soft opaque material, readily washed off with water, consisting of corpuscles of different forms, most of them caudate or fibro-plastic, but some spherical, though not resembling those of pus; and here and there fragments of the original peritoneal tissue, affected more or less with interstitial cell-development. At a short distance from the remains of the old thread, the fleshy material which had been formed at its expense proved to be a most beautiful example of fibro-plastic structure, the coarse fibres which mainly constituted it being composed of very large elongated cells, often containing several nuclei, and presenting in their course branchings and thickenings of various forms, as represented in the sketch (Fig. 3). Here and there were some fibres more perfectly formed, and also cells of a more rudimentary character. Again, the band which had resulted from the organisation of the two fine threads of catgut, which, from the smallness of their bulk, had no doubt vanished early, having had longer time to perfect its structure, was a comparatively well-developed form of fibrous tissue, consisting of coarse fibres, rather than of elongated cells, being thus intermediate between the merely fibro-plastic material of more recent growth and the completed texture of the original thread. For it is to be remarked that a piece of catgut exhibits under the microscope abundance of perfect fibrous tissue. A more favorable period for the investigation, with a view to establishing the nature of the change which ligatures of animal tissue experience under antiseptic management, could hardly have been selected.

Between the parts tied the calibre of the artery was occupied by adherent coagulum, which was for the most part decolorised, and exhibited under the microscope fibro-plastic cells of irregular forms. A similar clot was present between the distal ligature and a small branch that arose about a quarter of an inch beyond it. But between the proximal ligature and the heart the formation of a coagulum had been entirely prevented by a large vessel taking origin immediately above the part tied, which had thus borne for a month the full brunt of the cardiac impulse. Yet the vessel, so far from showing any signs of giving way, as it would inevitably have done had it been tied in such a situation without antiseptic precautions, appeared to have derived additional strength from the operation. The encircling ring of new tissue incorporated with the arterial wall must have had a corroborative effect; and within its grasp the inner coats, which seemed to have been but imperfectly ruptured by the soft and substantial ligature, were considerably thickened, and had coalesced so as to form a strong cul-de-sac, the irregularities of which had been smoothed over by a little fibrinous deposit, which had assumed the characters of a firm fibrous tissue, and presented a free surface undistinguishable from that of the lining membrane of the artery. (Fig. 2.)

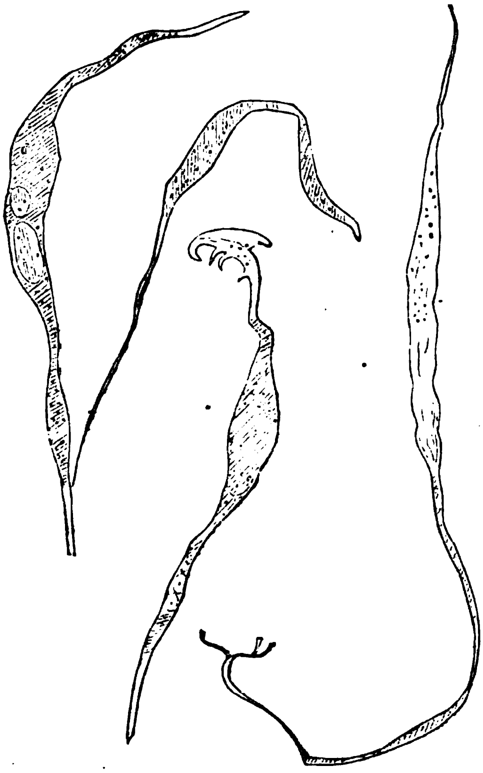
At the situation of the distal ligature the structure of the vessel seemed entirely unaffected. The middle coat was seen in longitudinal section as a pink streak between two white lines, representing the external and internal tunics, neither thicker nor thinner than in neighboring parts. The catgut threads had been tied too gently to produce rupture of the internal and middle layers, and their presence and the constriction which they occasioned, whatever may have been their effect in the first instance, had left no permanent marks of disturbance; while the fleshy band that had replaced them, though in time it would doubtless have dwindled to an insignificant filament, was at least a temporary addition to the strength of the artery.

FIG. 2.



The vessel seen in longitudinal section, magnified three diameters. From a camera lucida sketch. A. The artery to the cardiac side of the ligature, kept free from clot by the stream of blood through the branch, B. C, The coagulum filling the artery to the distal side of the ligature, F F′. F being at the situation of the knot, is thicker than F′. D. The middle and internal coats, some what thickened, and blended together within the grasp of the ligature. E, The external coat, continuous in structure with the organised ligature.

FIG. 3.



Above are shown, magnified 500 diameters, some of the elements of the fibro-plastic structure of the organised peritoneal ligature, at the knot F. From a camèra lucida sketch.

These appearances at the distal ligature are calculated to revive under a new aspect the old question whether it would not be better always to avoid rupture of the internal and middle coats, which could easily be done by using a pretty thick piece of catgut softened by steeping it in a watery solution of carbolic acid. In this way the wall of the vessel would be left from first to last entirely intact. This, however, is probably a matter of indifference. Indeed, judging from the condition of the artery at the cardiac ligature, the injury done to the vessel at the outset by tight tying seems to lead to changes which increase its power of resistance, which was certainly severely tested in the present instance.

It appears, then, that by applying a ligature of animal tissue antiseptically upon an artery, whether tightly or gently, we virtually surround it with a ring of living tissue, and strengthen the vessel where we obstruct it. The surgeon, therefore, may now tie an arterial trunk in its continuity close to a large branch, secure alike against secondary hæmorrhage and deep-seated suppuration,—provided always that he has so studied the principles of the antiseptic system, and so carefully considered the details of the mode of dressing best adapted to the particular case in hand, that he can feel certain of avoiding putrefaction in the wound. For my own part I should now, without hesitation, undertake ligature of the innominate, believing that it would prove a very safe procedure.

Catgut, manufactured from the small intestine of the sheep,[*] may be had at a very low price, from the thickness of a horse-hair upwards. In the dry state it is objectionable from its rigidity, and also from a tendency of the first half of the knot to slip before the second half is secured. Water renders it perfectly supple, and as little liable to slip as waxed silk. But if a watery solution of carbolic acid is used for the purpose of making it antiseptic, the protracted immersion requisite to ensure completeness of the effect makes the finer kinds too weak and the stouter too clumsy. The method which I have found to answer best is to keep the gut steeping in a solution of carbolic acid in five parts of olive oil, with a very small quantity of water diffused through it. A larger proportion of the acid would impair the tenacity of the thread. If a mere oily solution is employed, the gut remains rigid, the oil not entering at all into its substance. But a very small quantity of water, such as the acid enables the oil to dissolve, renders the gut supple without making it materially weaker or thicker. And, curiously enough, the presence of this small amount of water in the oily solution gradually brings about a change in the gut, indicated by a deep-brown color; after which it may be placed in a watery solution for a long time without swelling, as a portion prepared in a simple oily solution does. This is a great convenience; for an oily solution is unpleasant to work with during an operation, and exposure to the air soon renders gut suppled with water rigid from drying. But when it has been treated in the way above recommended, it may be transferred to a watery solution at the commencement of an operation, and so kept supple without having its strength or thickness altered.

---

[*] I need hardly remark that catgut is of a totally different nature from so-called silk-worm's gut, which is in reality unspun silk.

For tying an arterial trunk in its continuity, catgut as thick when dry as ordinary purse-silk, will be found best. But for ordinary wounds, where, if one ligature happens to break, another can be easily applied, much finer kinds may be employed, and are convenient from their smaller bulk. For every-day use, a small oil-tight capsule may be carried in the pocket-case, and this can be replenished from a larger stock as may be necessary. I have had a small silver bottle, with well-fitting screwed top, adapted to my caustic-case, and this contains two little rods of wood, with gut of two sizes wound upon them, with a few drops of the antiseptic oil; and now that torsion has almost entirely superseded the ligature in ordinary wounds, this small supply will probably last me for months.

Glasgow, March, 1869.

Clinical Lecture

ON THE

TREATMENT OF FRACTURES OF THE LEG.

By James Paget, F.R.S., D.C.L.,

Surgeon to St. Bartholomew's Hospital.

(Shorthand Report, revised by the Author.)

(Concluded from May number, p. 243.)

An essential condition for the good repair of fractures is that, once put up, they should not be moved till the repair is complete; and any apparatus, however ingenious or well designed it may seem, that does not usually fulfil that condition, is a defective one. Immobility of the fragments, perfect rest, and an undisturbed condition of the limb, are the essential conditions to fulfil in the treatment of all fractures. Moreover, by slinging the leg in this way, that condition which stands next in importance is fulfilled—namely, that the broken parts should be kept at rest, and the remainder of the body should be comparatively free to move. The patient's leg is kept completely at rest in the splint; but, being slung in this cradle, he can move the rest of the body, can sit up in bed, and can turn this way or that without any damage being done to the fracture.

But among these cases of fracture of the lower extremity there were some that may now require a more especial notice—some that were complicated. One of these was a case of compound fracture. "Samuel N——, aged seventy-seven years;" and yet, for that age, with considerable strength; for he was, as he described it, "temperate in both things." He seemed to think that there were but two things in life in which men could commit excess, and in both of these he had been all his life quite temperate. "On admission, with fracture of the tibia and fibula, a small wound was seen on the outer side of the leg, caused by the protrusion of the fibula." The fracture was just above the ankle, fairly across both bones, with but little distortion of the limb, but with a piece of the fibula thrust through the integument. "The wound was sealed up with collodion, and twelve hours afterwards carbolic-acid putty was applied. There had been a considerable bruising of the subcutaneous tissues, and the fibula was comminuted."

We will take that part of the case first. Compound fracture, of course, may involve the question whether amputation should be performed or not. There could be no reasonable question in this case. The amount of protrusion of bone and other damage done was not so considerable as to have justified amputation in any person; but in a man of seventy-seven the risks of primary amputation of the leg for injury are so great that it would hardly be possible to have a condition of fracture attended with a greater risk. So that, as a general rule, you would have to look for a case quite beyond and outside the ordinary condition of fractured legs, if you would think of amputating the limb in a person of seventy-seven. Collodion was put on at once, and then carbolic acid applied. You know we are trying the effects of carbolic acid for compound fractures and some other forms of injury, after the manner which has been so strongly recommended by Professor Lister. In this case I would say that the carbolic acid was applied, if not with all the skill that Professor Lister would employ it, yet with more than is ever likely to be generally used in the treatment of fractures; and yet it certainly did no good. I will not say that it did harm; if it did harm, it was rather through my fault in leaving it too long when the wound should have been left open to discharge itself. But, at any rate, carbolic acid, applied here with a considerable amount of care and skill, failed altogether to attain its end; for, three days after the fracture, we observed that the limb was becoming the seat of inflammation of the acutest kind—of the whole of its cellular tissues; more especially, as is commonly the case of the cellular tissue immediately below the skin. The whole limb became swollen, tense, very hot, and very painful; and there was generally diffused redness of the whole surface of the integument of the leg; and the same condition of things, in a less degree, extended up the thigh towards the groin — hardness, swelling, and œdema. At the same time the old man had all the signs of very acute fever.

Now, this condition of cellulitis following upon bad compound fractures is not a very rare thing, but in such an extreme degree as ensued in this man it is rare. It commonly subsides after the lapse of a few days, but in this man it went on manifestly to worse consequences—to softening, bogginess, and a tendency to sloughing of the integuments. Observe, it is a condition not peculiar to compound fractures; it is exactly the condition which you have had occasion to see lately in my wards in consequence of ruptured bursæ; and several other cases of ordinary wounds of the hands, during the last three months, have been admitted with precisely the same kind of cellulitis.

This condition, occurring after compound fracture, is also one in which the question of amputation is sometimes raised; but I think I cannot speak too strongly against the practice of amputation so long as this inflammation of the cellular tissue is in its acute condition. Under all cirumstances, amputations done for acute disease are less favorable than those which are done for chronic. Another division is still wanting in the tables that are constructed to determine the mortality of amputations. I think I can be sure that if the "amputations for diseases" were divided into amputations for acute disease and amputations for chronic disease, we should find the mortality of the former at least twice as high as the mortality of the latter. This corresponds with what one sees of secondary amputations for compound fracture and for other injuries. Those done for some acute condition are much more perilous than those which are done for some chronic state. Here, as I said, the age of the patient excluded the idea of amputation; but if amputation be done in such a case it should not be done in the acute condition of the cellulitis, except under the most urgent circumstances. The cellulitis should be allowed to take its course, and the stage of suppuration should be fully established before amputation should be done. But the cellulitis is not to be left to take its course unhindered. The treatment which I adopted in this old man is that which I would advise to you—that, namely, of treating the cellulitis as if it had arisen quite independently of fracture, by making incisions into the limb; the same practice as when arising from ruptured bursæ or any ordinary wound. Select as the parts in which to make the incisions those which feel to the touch boggy—those in which the integuments are softened, in which the tissues beneath are beginning to degenerate and soften preparatory to suppuration. In this case I made six or eight incisions through the integuments, down fairly into the subcutaneous tissue. They relieved the patient greatly, and I regret only that I did not make many more. I was hindered by the loss of blood, which in a man of that age it seems important to avoid. No doubt had I made more I should have greatly diminished the extent of slough which ensued. Now, as you see, the acute inflammation has for the most part subsided: that in the thigh has subsided almost entirely; that in the leg itself is very much reduced in amount. The sloughs have almost separated, and there remains a large extent of surface of the skin granulating, and, after its measure, healing. While these things were being done to the limb itself, the patient was put on what may be called an almost unlimited diet; he was allowed to have whatever he liked, and with that he was allowed to have six ounces of wine. Upon this plan the man has retained his strength, has continued cheerful, has a good firm pulse, sleeps pretty well, and has his bowels open every day—a point of great anxiety to him, for to it and his temperance he attributes his having lived to the age of seventy-seven, with a fair measure of health. Now he may be considered to have recovered from all the most urgent consequences of his fracture, and the case presents itself as a struggle between the man's remnant of power, and the necessity of producing an adequate amount of reparative material to provide for the repair of his damage.*

Here is a matter worth stopping a few minutes to consider. What do we mean when we talk of a man having power enough to repair an injury? It might reasonably be asked, Why is there any necessity for great power for the repair of an injury? As you watch this man you will see that there will be an almost daily question whether the remnant of his vital power (as we say) will not be exhausted in repairing the damage to his limb. There is nothing of acute inflammation, of acute fever, to waste him; that has passed by. Still it is a question whether he will have power enough to repair his fracture, and the sloughing that has ensued.

We have very imperfect means of ascertaining what amount of force is consumed in the repair of textures. But we do know that there is more force required for development of structures than there is for growth, and more force required for growth than for the ordinary maintenance of the structures; so that a continual expenditure of force is involved in the necessity, not only of maintaining all the tissues of a limb in their natural condition, but much more in that of repairing any damage which that limb has sustained—that is, of producing and organizing a sufficient quantity of material for the repair. In this case a large quantity of tissue must be formed for the purposes of the repair, and a large quantity of pus will be produced, and in both these processes there will be a large expenditure of vital force.

I suspect that if the question were asked, why the production of pus is a source of great exhaustion to patients, most of you would be puzzled to answer it. There is nothing in the materials or the chemistry of pus to explain the exhaustion. If you were to measure the quantity of pus which a man produces in the day, and give him the same quantity of milk to assimilate, he would, so far as materials are concerned, be on a nearly exact balance; and yet that amount of nutriment would not compensate for his loss of power in suppuration. I owe it to my house-surgeon, Mr. Butcher, to have suggested to me the real explanation—namely, that it is not the mere loss of material, but the expenditure of force, which exhausts a suppurating man. If pus contained no organized materials, the system might produce the same quantity without exhaustion; but there is a continual expenditure of force in producing and organizing the pus-cells, which are the degenerating materials for repair, and in the production of which, doubtless, there is just as much expenditure of force as there would be in the production of so much embryo material of true tissues. This seems to be the explanation of the waste of force which goes on in the process of large repairs; in largely suppurating wounds or abscesses; it is the expenditure of force in the formation of structures, however lowly organized.

The other case that I will speak of now is that of the man who passed into the condition of delirium tremens. A drayman, thirty-eight years old, was admtted with fracture of the tibia and fibula. This drayman was one of ten out of the eleven who were drunk upon the boxing-night. The one who was sober has been lost sight of; so we give them all the credit of sobriety, and treat them all alike. But this drayman was manifestly very drunk, and went to the further consequences of it. He was, however, treated like the rest;

---

* March 2nd.—The case continued to make good progress, and now the fractures feel firmly united, and the healing of the soft parts is nearly complete.

and for the first five days all went on with him as with the others. He combined the usual diet with a rather larger amount of stimulant than the others had—a pint of porter and four ounces of brandy. Besides that, he was ordered, in addition to the ordinary meat diet of the hospital, a pint of beef-tea; and particular directions were given that his feeding should be looked to. So that he had not only that amount of stimulant, but was carefully and well fed. But on December 30th his appetite began to fail; he was restless at night, and hid his dinner—a fact which I advise you to take careful note of. He was very restless during the next night, and had to be injected with half a grain of morphia. The next day he still refused his food and was very uneasy, and at night delirious, shouting and struggling. Then, although he was fastened with straps, he managed to pluck off his splints, and to thrust his fibula through the skin. The wound was immediately sealed with carbolic-acid putty, and a long splint applied, to which and to a back splint, the whole limb was firmly bandaged. During that night he took a drachm of the tincture of opium, and more than two grains of morphia were injected under the skin, without any apparent effect. Next day, however, with careful feeding, and the administration of a drachm of laudanum, he was much quieter and, after this he made a rapid recovery. This man was in the habit of drinking from twelve to twenty pints of beer per day.

There are some points in reference to the production of delirium tremens which I want you to look at. The man was not put upon any large quantity of stimulants when he was admitted; but directions were given that he should be well fed; and delirium tremens ensued, not after any diminution of stimulants, but upon the loss of his dinner. He hid his food: feeling for the day no appetite, he thought he might have an appetite by supper-time. Supper-time came, but delirium tremens had set in, and he was too wild to eat. Next day he refused his food absolutely, and was still more restless. The following day he had opiates, and improved; and he improved still more when he began to take food again.

I dare say you are all impressed with the general belief, which is still very prevalent, that delirium tremens depends mainly on abstracting stimulants from a person largely addicted to them. I will not say that it never depends on that; but what is more certain is, that it is much more likely to ensue when a person who is largely addicted to the use of stimulants leaves off food. So long as a man keeps up both the eating and the drinking, he is in little risk of delirium tremens. When either sudddenly he leaves off eating and takes to drinking, or when gradually he diminishes his food and increases his drink, he is in the greatest danger of that disease. So that we come to this—which may seem paradoxical and immoral too,—that a man who both eats and drinks too much is in less danger than a man who commits only one of those excesses. The double fault is less mischievous than the single: the eating countervails the harm that would ensue from the drinking. If we look about in society we may see this very plainly. There are still many persons habitually engaged in too great eating and drinking, doing both to excess; and they are in danger of breaking down in various defects of digestion and the consequent disturbances, but they are in no danger of delirium tremens. The people who are in that danger, and show the evil effects of drinking in the most marked form, are they who drink largely and eat little. And in all such cases as this drunken drayman's the risk of delirium tremens is not in diminishing the drink, but in not seeing that the patient takes sufficient food.

The admission of this fact has very much simplified the treatment of delirium tremens; and not simplified it alone, but made it more successful. I can well remember when, twenty-five or thirty years ago, delirium tremens was looked upon as a thing very likely to be fatal. It was treated with large quantities of stimulants and large quantities of opium: and this course of treatment was supposed to be necessary to cure it. Now we do not materially increase the quantity of stimulant when a man becomes the subject of delirium tremens; and we give no excessive doses of laudanum. The thing that we especially look to in these cases is that by any means the patients should be fed—fed by the rectum if they cannot be fed by the stomach.

After the thrusting of his own fibula through his skin, the wound, as I told you, was at once sealed with carbolic-acid putty by Mr. Butcher, and the result has been that no damage has been sustained in consequence of the fracture becoming compound. I am not prepared to say that this was due entirely to the treatment by carbolic acid. The wound made by the fibula was small, and not made with any great force—only the force of so much muscular power as the man could exercise in the broken limb. The wound was immediately closed, and had any ordinary covering been employed instead of the carbolic-acid putty, the result might have been the same.

Of the other fractures which were admitted I should like to point out to you the manner in which one was treated—the fracture of the upper arm. The lad was kept in bed. That is a measure not commonly necessary for the treatment of fractures of the arm; but here the upper part of the shaft of the humerus was so very nearly driven through the integuments—the edge of the bone could be felt with so thin a layer of skin covering it—that the least displacement would have converted it, not only into a compound fracture, but into one of the most serious kind, for it is probable that the capsule of the shoulder-joint was involved in the injury. Had the bone protruded through the skin, in the acute inflammation which would have been set up, the shoulder-joint would have participated, and this would have complicated the injury very considerably. It was, therefore, necessary that the lad should be in very much more perfect rest than most patients with fracture of the upper extremity need to be.

I adopted in this case the means of extension by a weight and pulley. You have seen this method often employed in fractures of the thigh, and still more often in diseases of the hip and knee joints. It is not commonly employed for fractures of the upper extremity; but is of great value in their treatment when they exist in their worse forms. The straps are fastened to the fore-arm, and from them a rope is carried over a pulley; and to this rope a weight is attached. The weight in this case was 4 lb.; and by means of this a persistent, steady extension, without any possibility of violence, was kept upon the arm, hour after hour, and day after day. The result has been that, very gradually and without any violence, the edge of the bone that was close beneath the skin has been drawn away from it—drawn into its right place; and now, after the lapse of three weeks, there is very fair union of the bone, and the lad gets up with perfect safety. I have adopted this apparatus from a description sent me by an American surgeon, whose name I am ashamed just now to have forgotten, who treats all his fractures of the humerus by the same means, but with such an adjustment that the patient can walk about with his ordinary splint upon the arm.

There is only one other fracture that I must speak of, and that is in an old woman who was admitted with fracture of the thigh. I have been speaking of delirium tremens following fracture; but remember that it is not every patient who becomes delirious, or even mad, after a fracture, who has delirium tremens. Rarely, and yet often enough to keep you on the alert, a patient becomes simply insane after an injury. Just as, after parturition, a patient with any tendency, inherited or otherwise, to insanity, may pass into a condition of puerperal mania, so, but more rarely, after an injury or an operation, a patient becomes maniacal, simply insane. This patient was an old woman of seventy-five or seventy-six, who was admitted with a fracture of the neck of the thigh-bone, and was treated after the ordinary manner. Two or three days after admission she became excited and strange in her manner, and, to be brief, in a day or two more it was perfectly manifest that she was insane; talking, foolish, excited, wakeful, but with none of the ordinary characteristics of delirium tremens. But her insanity was acute enough to produce that exhaustion which is so likely to occur in insane very old persons; and with this condition of mere insanity added to her fracture, she died.

Clinical Lecture

ON A CASE OF

FRACTURED BASE OF THE SKULL;

WITH RUPTURE OF A BRANCH OF THE SPINOUS ARTERY, AND PRESSURE ON THE BRAIN.

By John Adams, Esq., F.R.C.S.,
Surgeon to the London Hospital.

Arthur P——, aged thirty-two, bill-sticker, was admitted into the hospital on the evening of December 26th, apparently in a state of intoxication. He was unconscious, but resisted with both arms efforts to take off his clothes. It was said that he had been drinking, and had received a blow from a man's fist, that he had fallen upon the pavement, striking the back of his head. There was a slight laceration behind the left ear, and bleeding had taken place from the ear of that side, but this had stopped at the time of his admission; no paralysis was observed. He vomited soon after admission; he had also a very free action of the bowels, the motion being passed in the bed. Ice was applied to his head, the head having been shaved.

During the whole of the 27th he remained in the same state, taking liquid nourishment readily. He continued unconscious, but roused himself occasionally, so as to yawn and turn over to the left side. He could feel well in the left extremities, and move them well; but on the right side sensation seemed imperfect, and there was decided want of power in the right arm, with some loss of power in the right leg. When his moustache on the right lip was pulled, he frowned on the left side of his forehead, and put up his hand to remove the source of the annoyance. He kept his eyes closed. The pupils were of equal size and small, and he lay with his back to the light. When the soles of his feet were tickled, he moved the left foot well, the right but slowly and only after a time. The pulse was slow and regular, the breathing regular and without noise; temperature in axilla 99·6°.

On the 28th he was much the same. There was no discharge or bleeding from the left ear. An ounce and a half of house medicine was administered; and on the following day, the bowels not having responded to that aperient, he was ordered a drop of croton oil with a grain of calomel.

On the 30th, the bowels not having acted, the croton oil and calomel were repeated early in the morning. He seemed weaker, and lay on his back motionless. The right pupil was slightly dilated. Paralysis on the right side was still more marked, but there was some sensation in the arm of that side. At midday, the bowels being still unrelieved, he was ordered five grains of calomel with one drop of croton oil, and a turpentine enema; also a blister was applied to the nape of the neck.

On the 31st the paralysis was still increasing on the right side; pulse 108; breathing natural. The bowels had been freely moved.

On January 1st paralysis of the right side was complete; the pulse 122; breathing becoming stertorous. There was some ecchymosis about the lids of the left eye. The patient died early on the morning of the 2d.

At the post-mortem examination, on reflecting the scalp, there was found an effusion of blood into the substance of the left temporal muscle. On dissecting this muscle off the skull, a fracture was observed through the squamous portion of the temporal bone. There was no depression. The skull-cap was now sawn round in the usual situation, and a brain-knife passed in so as to make a horizontal section of the brain. A large clot was now found between the skull and dura mater, about three inches in length from before backwards, and about three-quarters of an inch in thickness, extending from the base of the skull over the side of the left hemisphere, and back to the cerebellum. There was considerable ecchymosis on the surface of the right hemisphere. On removing the brain there was found to be a fracture, commencing in the body of the sphenoid bone, extending forwards into the foramen lacerum basis cranii anterius, and, laterally, along the superior surface of the petrous portion of the temporal bone into the squamous portion of that bone, as already stated. There was no splintering of the inner table at any part.

I attach unusual interest to this case for vari ous reasons: first, because the result of our treatment was unfortunate; secondly, because a more energetic treatment might possibly have been attended with a more favorable result; thirdly, because the case illustrates a form of pressure on the brain of no very uncommon occurrence, and which may generally be diagnosed with tolerable accuracy.

I can have, gentlemen, but very few opportunities of again addressing you as one of the surgeons of this hospital, as my term of office expires next month. But I shall say nothing on that point except this: that in my clinical teaching, imperfect as it has been, I have endeavored to direct the attention of my pupils to cases where the treatment has been unfavorable as well as to those wearing a more favorable aspect. I may fairly ask, Could anything more have been done for this patient than was done? I am inclined to answer in the affirmative; and I will point out to you my reasons for this opinion as we proceed.

When I saw the patient on December 28th, he was in a state of partial insensibility, having received a blow on the head which felled him to the ground, and having fallen, as I was told, on the *back his head.* There had been slight bleeding from his left ear. He lay with his left hand behind his head, and seemed in a state of comparative ease, with other symptoms already described. The house-surgeon, Mr. Rutledge, reported the case to me as one of *suspected fracture of the base of the skull.*

The only signs of fractured base were partial insensibility and hæmorrhage from the ear, which, separately or collectively, cannot be accepted as genuine and positive signs of fractured base; for the first is a symptom of concussion of the brain, and the latter has been often found where there was no reason to suspect so serious an injury as fractured base, and it may be attributed to a simple rupture of the membrana tympani. In this case, however, the base of the skull was fractured, and the bleeding arose evidently from this, as the fracture extended across the base of the petrous bone. I may tell you that the only unmistakable signs of fractured base are, the escape of brain-substance from the ear, and the escape of cerebro-spinal fluid, this latter occurring a few days after the accident.

In forming an opinion on this case, the hæmorrhage from the ear was not overlooked, and great importance was attached to it; especially as it was accompanied with insensibility, which was increasing, though slowly, and especially as some ecchymosis became evident beneath the left lower eyelid. These symptoms therefore favored the idea of fractured base: to this I shall presently revert. I wish, however, to direct your attention to the increasing insensibility, and especially to the increase of the paralysis, of the right upper and lower extremities. The latter symptom is most important, as indicative of pressure from increasing hæmorrhage on the brain. I confess I was under the impression that bleeding was taking place on the dura mater, and I was anxious to trephine the skull. You may ask, Where would you trephine in such a case? To this there is but one answer—namely, trephine on the side of the skull opposite the paralysis; for you may be quite sure that *there* will be found the mischief to the brain. And I do not hesitate to tell you that the skull should have been trephined in the left temporal fossa, because the spinous artery, the probable source of the mischief, runs in that direction. I did not trephine for two reasons—first, because there were signs of fractured base, and no swelling or depression could be felt in any part of the calvaria; and next because, from the general concurrence of opinions, it was thought that no good could result from the operation. But I ought to have trephined nevertheless, even on speculation, relying on that important symptom, the gradual supervention of paralysis on the side opposite the seat of injury. There are cases on record of trephining on speculation, and with success. In this case success, *quoad* the operation, would have been complete. I don't mean to say that of necessity the case would have been cured, because the base was fracturad and the brain much contused on the opposite side; still it was the only chance of doing the patient any good, as it would have afforded an outlet for the effused blood, and thus have given to the brain an opportunity to recover from its other injuries.

We often attach importance to a fracture of the base of the skull greater than it deserves. No doubt it is a lesion of great severity, as indicative of enormous violence, and as a necessary cause of great cerebral mischief—sometimes of rupture of the brain-substance, and always of more or less damage to the cerebral nerves near their roots. I have no doubt that in most cases where the spinous artery is involved the fracture of the squamous portion of the temporal bone is an extension of a fracture commencing at the base, and traversing the groove in which the spinous artery runs.

I beg you to examine the specimen placed before you, and to observe the large size of the blood-clot situated between the skull and the dura mater. You know that this blood came from a rupture of the spinous or middle meningeal artery, a bloodvessel not so big as a crow-quill. Let me show you how strictly the dura mater adheres to the internal table of the cranial bones—see what force it requires to tear it from the bone; and yet the effused blood has ruptured the natural adhesions, and has forced its way for a considerable distance between the bone and the dura mater.

This phenomenon illustrates first the great power of the heart; and next it illustrates that well-known physical law "that in a given quantity of fluid submitted to compression the whole mass is equally affected, and similarly in all directions." I dare say you are all well acquainted with that useful machine called Bramah's press. It always strikes me that the action of the heart may be compared to a forcing pump, which, through the slender column of blood contained in the middle meningeal artery communicating with the effused blood on the surface of the dura mater, exerts its influence in all directions, and thus is capable of detaching this membrane from the bones to an almost indefinite extent.

We cannot tell exactly what the power of the heart is, but we know that it is very great indeed. You have only to place the surface of your hand over an aneurismal sac, and you will immediately be made to feel the enormous power of this organ.

It thus happens that the effused blood makes a palpable indentation on the surface of the brain, causing those symptoms to which we have so often referred, and which cannot be relieved except by making an opening in the skull to give exit to it. When you have an opportunity, and this opportunity must occur whilst you are studying at this hospital, let me advise you to look at the surface of the dura mater as it is seen at the bottom of the opening made by the trephine, where no effusion of blood has occurred, and you will see the brain heaved up synchronously with the contraction of the heart; this heaving movement it gets from the blood forced by the heart into the arterial circle of the base, and which heaving motion is essential to the function of this important organ. When pressure exists on the surface of the brain, all this ceases, and the functions of the brain are almost annihilated, and after a shorter or longer period death takes place.

Original Papers.

ON SOME OF THE FUNCTIONS OF THE MIDDLE AND INTERNAL EAR: AND THEIR ANALOGIES.

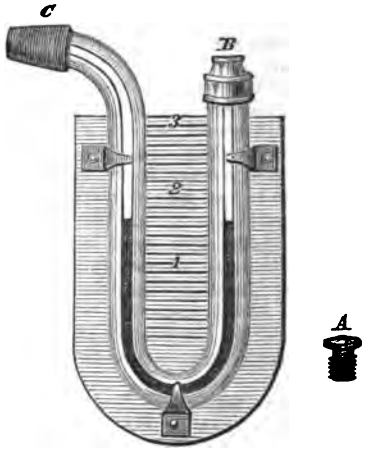
By Peter Allen, M.D., F.R.C.S., Edin.

(Continued from May No.—p. 249.)

The atmospheric changes occurring in the tympanum are detected by the manometer, also,

3. *In the Valsalva method of inflation*, described on page 10. Air is forced into the tympanum in such excessive quantity as to overcome the muscles of the tube and the elastic resistance of the membrane, and to blow the latter outwards. The Eustachian tube muscles return to rest, and the air becomes imprisoned. Here *condensation* of the tympanic air is decidedly shown by the rising of the fluid in the manometer to a point. That the air confined in the drum is then released by swallowing, yawning, or other suitable action of the tube muscles, is equally well demonstrated by the retrocession of the manometrical fluid to the point at which it stood immediately before the experiment.

The movements of the membrana tympani in certain morbid conditions, when a pressure of air is exerted against its internal surface, become of diagnostic value, in proportion as we understand correctly the signs which may then be observed. To instance an affection of not unfrequent occurrence, in which persons who have suffered from long-continued catarrhal deafness effect a temporary improvement in their hearing by violently blowing the nose. Here me may, by the manometer, detect a collapsed or relaxed condition of the membrana tympani, when quite unable to do so by inspection. This instrument will prove the motion-capacity of the membrane to have become considerably increased, particularly in its excursions outwards, thus indicating that its natural elasticity has been weakened, and its vibratility impaired; its functions being, from these causes, restricted to the reception and conveyance of loud sounds only. As an example of the important aid derived from this new method of investigating and diagnosing aural disease, I will mention that this day, when I write, a most successful case has presented itself in my practice, in which membranes collapsed and fallen in on both sides have been made to return to their natural position, the hearing distance of the watch increased from two inches to five feet, and a whispering conversation easily maintained. For the sake of brevity I particularise no symptoms that do not bear upon the point in question. The patient, a child seven years of age, has a cleft soft palate, and had such contraction of the walls of the right meatus as to reduce the passage to a mere slit, and render inspection of the membrana tympani impossible. The manometer, however, indicated its state and position. The left meatus was less contracted, but she was quite as deaf on that side; showing that the condition of the external parts was not the cause of deafness, but rather a thickened and congested state of the mucous internal linings, and perhaps adhesions between the membrana tympani and contents of the tympanum—a morbid condition, in fact, kindred to that observable on the faucial and pharyngeal mucous membrane. After five visits, and with the help of Siegler's pneumatic speculum, I succeeded in breaking down the adhesions and restoring hearing, as well as in effecting, by other means, dilatation of the contracted meatus, and bringing the fauces and palate into a healthier state in readiness for Mr. Sercombe's professional assistance.



TYMPANO-MANOMETER (ALLEN'S).
A screws down air-tight upon *B*, to prevent disturbance of the colored fluid when the manometer is carried in the pocket. *C* represents a piece of india-rubber tubing to fit air-tight in the meatus. The instrument can be reversed on its graduated boxwood scale. so as to be applied to either ear. (Made by Weiss and Son.)

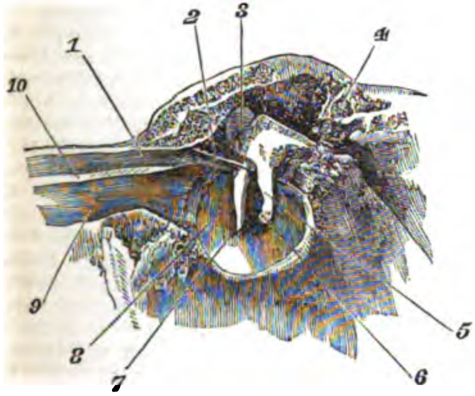
On sound-conduction.—It need scarcely be said that the sonorous undulations which enter the meatus impinge upon the stretched membrane of the drum, and set it vibrating. These vibrations are communicated in part to the air in the tympanum, and in part to the chain of ossicles. It will be convenient now to allude to the first of these modes of transmission, inasmuch as I consider that the air in the cavity of the tympanum is the chief means whereby the vibrations, especially the finer and more delicate waves, are propagated to the labyrinthine fluid. Moreover, the tympanic air is an auxillary to sound-conduction by the ossicles, since it insulates their chain, and so conduces to very free oscillation.

In reviewing the several functions of the tympanum briefly referred to in the foregoing papers, I became strongly impressed with the idea that the constantly varying atmospheric condition of the chamber must require to be carefully regulated and governed by a process which could only be effectuated by the nervous system. It appeared to me to be a fundamental necessity that the air in the tympanum should be properly adjusted; otherwise we could hear but imperfectly, and should be deaf to certain sounds.

We have seen that excessive rarefaction, or condensation, will both give rise to the same feeling, that of *fullness*, more or less painful in character, according as the membrane is stretched strongly inwards or outwards; and if we judge by the *sensation* alone, we may, like Mr. Toynbee and others, fail to discriminate between the effects produced by distension of the drum (condensation) and emptiness (rarefaction); pain and deafness existing in both instances.

In the remarkable nerve, the *chorda tympani*, is found, I believe, an unerring index of the varying atmospheric changes going on within the drum. It is, in fact, so to speak, a nervo-manometer: it indicates the pressure to which it is subjected by either of the influences presently to be mentioned, and indirectly governs the admission or expulsion of air to or from the chamber, with wonderful precision.

In opening this new ground of physiological inquiry, I would beg to recall to my readers the anatomical relations of the chorda to the tympanum and its contents (fig. 2 in the subjoined engraving). We must regard this nerve as a branch of the facial, not of the fifth, but composed of both. Before its junction with the lingual, there are communications with other nerves and with ganglia, and anastomoses with the sympathetic. It is, therefore, a nerve endowed with very compound functions—motor, partly sensory, ganglionic, and governing the secretion of the submaxillary, and, in some degree, of the sublingual and parotid glands. The course—constant, but tortuous, and very indirect to the structures in which its filaments are ultimately distributed—is significant. From its canal of entrance to its canal of exit, it passes between the upper part of the manubrium of the malleus and long crus of the incus, and, being in close apposition to the processus gracilis, is bound down to it by the lining mucous membrane of the tympanum. The arches of the palate, the uvula, and the fauces, are by its means brought under the motor influence of the facial nerve.*



External wall of the cavity of the tympanum, seen from its internal face. The Eustachian tube and canal for the tensor tympani muscle are laid open. 1. Tensor tympani, with its tendon inserted into the manubrium of the malleus. 2. Chorda tympani nerve. 3. Head of the malleus. 4 & 5. Short and long processes of the incus. 6. Lenticular process of the incus. 7. Extremity of the manubrium of the malleus. 8. Membrana tympani. 9. Eustachian tube. 10. Upper wall of Eustachian tube. (After Henle.)

Now, excitation of the chorda tympani will not only cause contraction of some of the muscles which open the Eustachian tube, but will also, according to Bernard and other physiologists, stimulate the glands to which its filaments are distributed to an increased flow of saliva. A small quantity of the salivary secretion applied to the fauces will cause us to swallow. By swallowing we open the Eustachian tubes, and restore equilibrium between the exernal and the tympanic air. The same result may be obtained by contracting the palate muscles, which I find the readiest way. Given, a sufficient stimulus to the chorda tympani itself, and the changes just specified will immediately supervene. The question now occurs, What amount or kind of stimulus can excite the chorda tympani to action? I believe that the functions of the nerve may be developed in two ways, both being by physical pressure, but differently applied—1st, by pressure of air which is not very sudden or severe in its operation, and is therefore more likely to induce secretion from the salivary glands; 2dly, by strong, quick, energetic pressure, almost a blow, from the bone with which it lies in contact, therefore more likely to cause muscular contraction. An example of the first kind is presented when the air within the tympanum becomes excessive. By its pressure on the chorda tympani, it will supply the requisite stimulus, and cause its own expulsion, by the consecutive and associated movements before referred to. An example of the second kind is shown when there is an insufficiency of air within the tympanum, or when a greater density of external air has driven the membrane inwards. The needful impulse will then be given to the nerve by the pressure, more or less suddenly applied, of the processus gracilis, as it turns on its axis during tension of the membrane. Thus by a combination of automatic or involuntary acts, *adjustment* of the tympanic air is brought about. Comparative anatomy furnishes an interesting analogy to this arrangement. In birds the tympanum is comparatively large, the membrane convex, and there is a single Eustachian tube, which is membranous, and the two osseous tubes open into it. The common membranous tube is situated between the internal pterygoid muscles, to the surfaces of which it is adherent. By the action of these muscles, the walls of the tube are separated, and a communication is made between the tympanic cavity and the pharynx. The chorda tympani nerve, it must be remembered, joins the gustatory at an angle close to the pterygoids.

---

* Dr. Todd, in his Cyclopædia of Anatomy and Physiology, art. Hearing, says: "It is impossible, in the present state of our knowledge, to say what is the office of the chorda tympani, or whether it has any office in connexion with hearing; but we may easily conceive that from its connexion with the facial, an irritation of it may excite that nerve." The functions of the Eustachian tube were not then understood.

While the drawing of the tensor tympani muscle lying in its canal is before us (Fig. 1), I wish, as cursorily as possible, to notice one or two anatomical particulars which may lead to a more precise knowledge of its functions, and, perhaps, more truly explain certain physical actions taking place in the tympanic cavity which physiology has hitherto not succeeded in doing to my satisfaction. What becomes of the air in the tympanum during sudden forcible tension of its membrane by the contraction of this muscle of the malleus when excited by the expectation of a loud sound? We find the explanation in the anatomical arrangement of the fibres of the muscle.*

As the result of careful dissection, and cautious tracing of the fibres of the tensor tympani, I must object to the description which is usually given in anatomical works, and I shall as generally sanctioned, employ the term "origin" to denote its fixed attachment, and insertion the movable one. I am, moreover, of opinion that some of the fleshy fibres of this tensor muscle have been erroneously considered as appertaining to another muscle (the *laxator* tympani), in the existence of which I do not believe. The tensor tympani, then, *arises* from the spinous process of the sphenoid, from the adjoining inner surface behind the foramen spinosum, from the inner angle of the petrous portion of the temporal bone, and from the walls of the osteo-fibrous canal (processus cochleariformis). The long, tapering fleshy fibres lying in this canal, which serves as their sheath, proceed upwards, backwards, and outwards, and end in a round tendon, which winds directly outwards round the margin of the canal, as through a pulley, to be *inserted* into the upper part of the manubrium of the malleus, just below the commencement of the processus gracilis. The lower, internal, and shorter muscular fibres converge, and are firmly *inserted* into the upper surface of the Eustachian tube, where the thinner membranous part joins the osseous. These fibres, acting, will draw the upper and inner wall of the tube apart from the opposite wall, and thus create a diverticulum or pouch, into which the tympanic air recedes when the membrana tympani is drawn inwards by the tendon during contraction of the other fibres in their canal. The tensor tympani receives its nervous supply from the otic ganglion, which comes from the motor root of the inferior maxillary of the fifth, and may be influenced by reflex action.

If the membrana tympani is not rendered tense, and the muscles prepared, in expectation of a very loud sound, the former may be ruptured, or the auditory nerve suffer dangerous concussion, by the stapes being driven in upon the labyrinthine fluid. Sailors and artillerymen have been rendered more or less permanently deaf by the unexpected firing of a big gun close to them. I will just allude to one sad but interesting case which came under my notice and treatment while acting as assistant-surgeon to the 56th Regiment in the Crimea. One of the senior lieutenants (and a handsome, gallant officer he was, too), a few nights before the last assault on the Redan, was in command of a working party engaged in making the most advanced sap, when a shell from the enemy exploded close by—in fact, on a man's back as he lay prostrate, killing him and a comrade. Lieut. P. sprang high in the air with a loud shriek, and fell stunned: his uniform was rent to shreds, and his skin covered with powder. The only serious bodily injury was rupture of the membrana tympani in both ears. Much inflammation ensued, with suppuration and loss of structure, and he was invalided home.

(To be continued.)

---

* The terms "origin" and "insertion," relating to muscles, are often applied so arbitrarily as to lead us into error in assigning their action.

A NOTE ON THE USE OF SULPHUR IN ITCH.

By Tilbury Fox, M.D., London,

Physician to the Skin Department, Charing-Cross Hospital.

I am sometimes tempted to think that it would be well if sulphur were altogether expunged from the list of remedies available for the treatment of diseases of the skin. This does not arise in any degree, however, from my being in the least infected with the fashionable skepticism of the present day, which sees almost no virtue in drugs, for indeed I avow myself a firm believer in their power, when properly used, over disease, and always give them with a reason, and therefore with confidence,—but by the fact that not a week passes but I see, both in hospital and in private practice, that sulphur is much misused, producing evil instead of good, both for patient and doctor. And this is especially the case in scabies. Sulphur is a remedy which can do a great deal of good and a great deal of harm. That I may prevent some of the latter, I again call attention to one or two therapuetical points of practical importance touching the cure of itch, which by reason of its very commonness is apt to have a stereotyped treatment. Now scabies is usually treated as though all the eruptive phenomena seen in the body of a scabious subject were really "scabies;" that is, as though there were some parasite to destroy wherever a rash exists, and acari were present in or immediately about the papules and vesicles of which the eruption in different parts of the body is composed. The fact is, that in the early stage of itch the acari are almost entirely confined, if not absolutely, to the hands in adults, and to the region of the buttocks and feet in children. In chronic scabies, or in disease derived from contact with a person affected with chronic scabies, acari are no doubt present elsewhere, and in parts other than the hands. But in the general run of cases the essential seat of scabies is the interdigits and the wrist. The mass of the eruption about the arms and the body is secondary to the irritation induced by the acari about the hands, and if the acari there be destroyed, the "sympathetic" eruption, if not artificially aggravated, vanishes. Sulphur is the best remedy for the destruction of the itch insect; therefore it should be used (I speak of the majority of cases) to the hands where the acari are; and as it is an irritant to inflamed parts, it should not be hazardously applied to the parts where the secondary eruption exists, for it can serve no other purpose than that of increasing the eruption; and even applied to the apparently sound though irritable skin of a scabious patient, it will induce eruption. Then much of the eruption is the result of scratching the skin to relieve the irritation, its character depending upon the state of health of the patient.

Well, these are very simple truths. But they really require to be repeated over and over again, because the practice of many is to apply sulphur ointment, in a patient affected with itch, to every part that itches; or, indeed, as in the case where the sulphur bath is used, to the whole body. This is a mode of treatment from which I entirely dissent. The specific remedy should be used to the hands as freely as possible, and there only, in the vast majority of cases. There is another point of importance. As sulphur is a stimulant, and if freely used an irritant, of course it is desirable to employ it in the least possible amount, but of course such as suffices to effectually kill the acari. I am sure the ordinary sulphur ointment is much too strong. Usually it contains one part in five. I think one in sixteen (half a drachm to the ounce) is sufficient if combined with the ingredients to be presently noticed. The use of the old sulphur and hellebore ointment should be utterly rejected. Before using sulphur it is well to wash the hands with soap. Then another important consideration is the length of time during which it should be used. Very many practitioners continue the sulphur treatment long after this is at all necessary. They are misled by the continuance of the itching, which they take to mean the continuance of the disease, whereas it is sometimes the result of the action of the sulphur. If the acari are killed, the itching ceases, of course, and if we carefully note the patient's condition, we shall find that after a few vigorous applications to the interdigits and the wrist only, the itching is subsiding, and the general irritation would then soon cease; but if sulphur has been, and continues to be, applied to the sympathetic or secondary eruption, the itching is often only increased; and though the true scabies itself (that constituted by the acari in their burrows) is in reality well, the disease is apparently worse, because the secondary eruption has been intensified. Leave off, as I have done in scores of cases that have fallen into my hands, under such circumstances, all sulphur treatment, give a bran bath, and use freely an oxide-of-zinc lotion, and the patient soon gets well. But I have said that there are a few acari scattered about in the midst of the secondary eruption over the body, in some cases, especially chronic ones. To kill these it is only necessary to smear over the dark-looking papules about the body and any eruption along the upper line of the penis, the specific remedy taking care not to irritateany parts that are "weeping" or "oozing."

These observations relative to the unnecessary irritation of secondary eruptions, apply with special force to the case of children.

I may sum up, then, by saying that in treating scabies we should use the specific remedy in recent cases as freely as we like to the interdigits and wrists *only*, and apply *soothing remedies to the general surface*; that the sulphur should be in small quantity, and that sulphur baths should be discarded. I employ half a drachm to an ounce of lard, with three drops of creasote, and five grains of ammonia-chloride of mercury, a little olive oil, and a drop or two of essential oil. In chronic itch, however, this form of specific remedy may be applied to all eruptions of discrete character. I prefer the three day's treatment of scabies, keeping on the same linen, and then having a thorough cleansing with soap and a clean change. Less after-consequences follow this than more heroic and rapid modes of cure.

I may just say in regard to skin diseases generally, that sulphur is only admissable in chronic cases where there is an absence of active inflammatory action. We find it said in books that it is good for eczema, psoriasis, acne, erythema, and other diseases. Well, not in the acute or active stage. It does harm. When diseases have become indolent, and the skin needs to be stimulated, then sulphur is of use, and I think then only. I have seen on many faces and many skins a dirty, rough, and slightly reddened surface, difficult of cure, produced by the use of sulphur, very much to the annoyance of patients. Stimulation is constantly effected where soothing is required. The matter is a simple one, as I have said, but important for all that to practitioners.

Sackville-street, Piccadilly, W., March, 1869.

ON THE NUTRITIVE VALUE OF DIFFERENT SORTS OF FOOD.

By Baron Liebig.

(Concluded from May No.—p. 247.)

The price we pay for our food does not always correspond with its nutritive worth, and therefore some remarks as to the method by which this may be judged of approximatively will, for some, not be without interest. The figures which follow will, of course, vary according to season and to place; the prices of certain articles, for example, being very different in a town from the prices of the same articles in the country.

I will begin with *Milk*.

Cow's milk contains butter, sugar of milk, casein, and nutritive salts. Each of these ingredients has a price; the nutritive salts one so insignificant that it is unnecessary to take them into account. If we calculated the butter and sugar of milk according to their market value, we should commit an error as regards determining their nutritive value. Butter, as a heat-giving substance, has no more nutritive value than pig's lard, or any other fat; and sugar of milk not more than sugar of starch (glucose). In making our estimate, therefore, the price of butter may be taken as not higher than that of lard or fat in general; and the price of sugar of milk as not higher than that of glucose.

In these calculations there is, as will be observed, much that is arbitrary; nevertheless, they are interesting.

Ten gallons of milk, at 2½*d.* per pint, cost 200 pence. If we take the price of butter at 11*d.* per lb., which is that of lard or other fat, and sugar of milk at 5*d.*, then the price of casein may be estimated as follows:—

80 pints of milk at 2½*d.* per pint, cost 200*d.* These contain—

3 lb. butter, at 11*d.* per lb.	33*d.*
5 lb. sugar of milk, at 5*d.* per pound. ...	25*d.*
Then the 4lb. cheese also contained in it, say	142*d.*
	200*d.*

Thus, in the milk we pay for 1 lb. of casein 35½*d.* On large farms milk costs still less than is calculated above, in which case our reckoning would lead to a different result.

The price of ordinary Cheshire cheese is 1*s.* per lb. 100 lb. cost therefore 1200*d.*, in which are contained—

25 lb. butter, at 11*d.* per lb.	275*d.*
45 lb. of cheese	925*d.*
30 lb. of water	
100 lb.	1200*d.*

Thus the price paid for 1 lb. of cheese—pure cheese—is in reality 20*d.*

Eggs.—A hard-boiled egg weighs, without the shell, 1 oz. 6½ dr. (40 grammes). The price of a dozen eggs is 20*d.* 140 eggs correspond to 10 lb. of hard-boiled eggs, and cost 171*d.* 100 parts of hard eggs contain—

74·67 water
10·43 fat
14·90 albuminates

100·00

These 10 lb. of eggs contain—

1 lb. 11 dr. fat, ...	11½*d.*
1 lb. 6½ oz. albuminate, ...	159½*d.*
	171*d.*

1 lb. of albumen in eggs costs therefore 130*d.*, or nearly 11*s.*

Butcher's meat.—According to calculations made in my household, there is, on an average, in every 100 lbs. of beef (ribs of beef), including bone, 67 lb. of muscle; the rest consists of membrane (3½ lb.), fat (8½ lb.), and bone (21½ lb.)

100 lb. of beef, at 10*d.* per lb., cost 1000*d.*, and contain—

21·5 lb.	bone, at ¼*d.* per lb., worth	31*d.*
8·5 lb.	fat, at 11*d.*	93½*d.*
3·0 lb.	membrane, most at 2*d.* per lb. ...	6*d.*
67·0 lb. meat	50·9 water	
	2·2 extractum carnis, at 132*d.*,	290*d.*
	13·9 fibrin and albumen, ...	579½*d.*
100·0 lb.		1000*d.*

Thus, in meat we pay for the albuminates at the rate of 42*d.* per lb.

Of the different sorts of food furnished by animals, cheese is the cheapest, and eggs are the dearest.

To reckon the worth of substances forming a vegetable diet is a work of greater uncertainty than the calculations relating to animal food. Wheat-flour and potatoes contain farina, which is obtained from both in different factories, and has in commerce a very variable market price. Farina made from wheat is dearer than that prepared from potatoes; as a nutritive substance, however (heat-giving substance) the value of each is the same. In calculating the worth of wheat-flour, the price of wheat-farina cannot be taken; and if, as is done in the following calculations, the price of potato-farina is adopted, this also is too high, as the cost of production is included in it, which has nothing to do with the nutritive value. This circumstance, however, is of little importance in considering generally their nutritive value.

Wheat-flour.—1 cwt. of wheat-flour at wholesale price costs 20*s.* (240*d.*), in which are contained—

20 lb. water, ashes, cellulose	
77 lb. farina, at 15*s.* 6*d.* per cwt. (starch)	128*d.*
15 lb. albuminate	112*d.*
112 lb.	240*d.*

Accordingly 1 lb. of albuminate in wheat flour costs 7½*d.*

Peas.—1 bushel weighs 60 lb., and costs, wholesale, 10*s.* (120*d.*) These 60 lb. contain—

15 lb. water, ashes, cellulose	
33 lb. farina	61*d.*
12 lb. albuminate (legumin)...	59*d.*
60 lb.	120*d.*

Thus 1 lb. of albuminate in peas costs nearly 5*d.*

Potatoes.—1 lb. of potatoes costs 1*d.*; 100 lbs., 100*d.* They contain—

80 lb. water	
2 lb. albumen	70*d.*
18 lb. farina	30*d.*
100 lb.	100*d.*

In potatoes, therefore, 1 lb. of albuminate costs 35*d.*

These comparisons are intended to demonstrate the differences existing in these articles of food, and to show that the price of each has nothing to do with the amount of albuminate, or heat-producing matter, which it contains.

Farina and fat are employed for various other purposes as well as for food, and this circumstance has an influence on their price. The albuminates, on the other hand, important as they are in nutrition, have no commercial value; only gluten, for example, which, in the manufacture of wheat-starch, is turned to profit as an adventitious product, is used by shoemakers as glue, the only use, I believe, to which it is put.

When we know of what certain articles of food are composed, it is easy to calculate what mixture of substances containing most nutrition will cost least. We must not forget, however, that the prices of those articles of food are essentially influenced by the cost of their preparation. The transforming of wheaten flour into bread is the least expensive operation. Peas, in order to transmute them into a perfect article of food, require certain additions which must be taken into account. Peas contain, for example, more albuminate than wheat-flour, but very much less farina (heat-producing matter). In food this farina may be replaced by fat; 10 parts fat having the same value, as heat-producing matter, as 24 parts farina. Thus we reckon that to 100 lb. of peas 19 lb. of fat must be added, in order to give the mess of peas the same effect as wheaten flour, always supposing the latter to be unbolted.

100 lb. peas = 148 lb. wheat-flour.

in which are

20 lb. albuminate,	20 lb. albuminate.
55 lb. farina 19 lb. fat = 46 lb. farina	101 lb. farina.

Taking the price of 100 lb. of peas at 200*d.*, and the price of 19 lb. of fat at 209*d.*, the mess of peas will cost 409*d.*; and as the price of 148 lb. of wheat flour is only 308*d.*, the mess of peas will cost one-fourth more. By replacing the fat partly by farina—for instance, by adding to 100 lb. of peas, 5 lb. of fat and 34 lb. of farina,—the price of the dish of peas will be nearly the same as wheat-flour (321*d.*) If we add to the 100 lb. of peas $3\frac{1}{5}$ lb. of extract of meat, the nutritive value of the mass will be raised by 100 lb. of meat—that is to say, the 20 lb. albuminate in the peas will bear the same relation to the organisation of him who eats them as if he had taken the same in the form of meat.

From the above calculation it is clear that the price of 1 lb. albuminate in different sorts of food is as follows:—

1 lb.	albuminate in	cheese costs	20*d.*
1 lb.	”	milk	35*d.*
1 lb.	”	meat	42*d.*
1 lb.	”	eggs	113*d.*
		In vegetables.	
1 lb	albuminate in	wheat flour costs ...	7½*d.*
1 lb.	”	peas	5*d.*
1 lb.	”	potatoes	35*d.*

The albuminates in vegetables must of necessity be much cheaper than in meat; were it not so, the production, at a reasonable price, of the latter by feeding cattle would be impossible.

To these calculations no greater value must be attached than they deserve. My aim will be attained if I have succeeded in convincing the reader that even when we eat we may do so according to fixed principles; and he who has learned to do so has learned something of the art of prolonging life. Even the act of eating and drinking may teach us that we are under the influence of natural laws which act upon our bodily condition, and, as a consequence of such influence, on our acts also. A knowledge of natural laws contributes to make man what he ought to be; they determine the rank he holds above the other animals, and it is just this in which their value lies.

ON THE ADMINISTRATION OF FOOD AND MEDICINE BY THE NOSE WHEN THEY CANNOT BE GIVEN BY THE MOUTH.

By D. Anderson Moxey, M.D., M.R.C.P.

At the present time, when the attention of the medical profession is being particularly directed to the all-important department of *therapeutics*, the subject treated of in the subjoined notes may, I hope, appear so far cognate to the earnest inquiries and investigations now being pursued in that direction, as to merit the kind consideration of my professional brethren.

Therapeutic agents, however much their action may be desiderated, are of course valueless in the hands of a physician if they cannot be introduced into the system of his patient. And few of us are so young and inexperienced as not to have met with cases in which inability to administer by the mouth nourishment or stimulants, it may be, or some sedative, evacuant, or alterative drug, or else inability to retain injections administered by the rectum (which is a frequent coexistent difficulty in such cases), has been the cause of bitter regret to the medical man who has seen a patient slip through his fingers who otherwise might possibly have been saved.

It is, doubtless, a matter for congratulation that, when the mouth is practically closed against the passage through it of food, drink, and medicine, there still remain patent to our sanative efforts the media for absorption presented by the rectum, by the skin, and by the lungs—one or all of them; and that, in certain circumstances, subcutaneous injection, or even direct injection into a vein, may be superadded. But how seldom can any, or all of these means conjointly, compensate for the loss of that process of digestion and assimilation that can only be properly effected in the stomach and duodenum. And hence how great a desideratum it would be, in cases where feeding by the mouth was impossible, if we still could reach the stomach by some other channel. It is to this other channel that I would now direct attention; for there is another and a most available channel to the stomach, and that channel is the nose. I do not advance this as a previously unknown anatomical fact—a discovery of the year 1869! I simply put it forward as an insufficiently recognised therapeutic fact. And I can only hope that I may be able to impress others with my own estimation of its value; so that they may try it in suitable cases, and obtain, as I have, practical proof of the infinite advantages possesssed by feeding through the nose over all the other substitutes resorted to, when the mouth is not available for the purpose.

It seems almost unnecessary to spend time in proving that a given amount of nutriment which finds its way into the stomach, and thus is subjected to all the healthy and natural influences of the gastric and duodenal digestion, which convert it into chyle, and render it fit for the support and nutrition of the body, must be of infinitely more value than a similar amount administered by enema, and absorbed in its crude state by the mucous membrane of the rectum. In like manner, it need hardly be remarked that stimuli which reach the stomach by way of the nares, pharynx, and œsophagus must, through the vagus, exercise a much more powerful and rapid effect on the heart (which is the object generally aimed at in their administration) than if their action has to be propagated all the way from the rectum. Again, the number of remedies that can be conveniently exhibited by subcutaneous injection is extremely limited, and in most cases even those so applicable fulfil their mission much more efficaciously when they act through the stomach. As for those cases in which direct injection into the circulation has been employed, or where the absorbent power of the respiratory system can be advantageously brought into requisition, they are so rare and exceptional as to warrant their dismissal without further comment; and the same remark applies, as a general rule, to cutaneous inunction.

The paramount importance, then, of subjecting all ingesta to the process of digestion being established—in other words, the immense advantage of getting food and physic *into the stomach* being fully recognised,—it now devolves upon me to show that their administration through the nostrils is not only an effectual, but an easy and not particularly disagreeable method of feeding.

In cases of insanity, where the patient obstinately refuses food, this method saves no end of struggling, and consequent injury to the teeth, gums, lips, &c.; and, where great prostration is present, it obviates the fatigue that injections and innunctions would give rise to, and the pain that would be occasioned by subcutaneous injection. Moreover, where the powers of life are very low, and where insensibility is present, sphincteric action is generally lost, and injections cannot be retained; whereas the reflex act of deglution, which takes place when a liquid runs through the nostril into the pharynx, often continues, I believe, long after complete relaxation of the sphincters; and even where it is lost I have been enabled to satisfy myself that liquids may find their way into the stomach, by virtue of their own specific gravity, without the assistance of the vermicular undulations of the œsophagus. In cases, however, in which the involuntary action of swallowing is not produced by the irritation of a liquid in the pharynx, no good can be expected from the administration of food in any shape or form, as in such circumstances, digestion, absorption, and all the vital functions, must be well-nigh extinguished.

The circumstances under which I have resorted to feeding through the nostril are, in cases of insanity in which the patient refused food, in inflamed and ulcerated sore-throat, in glossitis, in cases of deep intoxication (dead drunk), and in infancy where nothing could be administered by the mouth nor retained by the rectum.

For the last ten years I have been in the constant habit of employing this method of feeding in every form of insanity—as mania, melancholia, dementia, general paralysis, and idiocy, where the patient has refused, or is physically incapable of taking, food by the mouth. When a lunatic obstinately refuses food, instead of forcing an iron spoon into his mouth, at the risk of breaking his teeth, contusing his gums, or lacerating his lips and cheeks, by simply controlling the movements of the patient while he lies on his back, and holding a small wedgewood funnel in one of his nostrils, from a pint to a quart of the strongest fluid, or even semi-solid nourishment, can be administered at a time. Stimulants and medicine can also be given in the same way, and without apparently irritating the nares in the slightest degree. And the administration can be conducted throughout without the violent struggling and screaming, the injury both to patient and attendants, and the sputtering and waste that accompany every attempt to force food or medicine down a lunatic's throat. Moreover, I have never witnessed the look of fierce resentment, the scowl of unconcealed hate, with which a patient glares at the attendants who have just wrenched open his mouth, and half suffocated him in their anxiety to cram food into his pharynx. Generally speaking, after one administration through the nostril, the patient feels so completely powerless to prevent the passage of food into his stomach that he makes a virtue of a necessity, and consents to take it in the ordinary way. Another advantage of this method of feeding is that the medical attendant, who ought always, if possible, to administer the food personally, can do so without running the risk of personal injury, or at least of having his clothes torn or bespattered with food or blood.

As to the method of administering food to an insane patient through the nostril, I invariably try first to induce him to take it quietly and in the ordinary way, explaining that in the event of his continuing to refuse, it must be given through the nose; at the same time I take care to make him feel that such a procedure is adopted, not as a punishment, but simply as the only alternative which he forces on me. I then summon three attendants at least (four or five, if they can be had), and lay the patient down on his back, as quietly as possible, on a low couch in the middle of the room. I generelly use a small folding iron bedstead, from which the pillows have been removed, for this purpose; and when the patient sees so many assistants he submits quietly, as a rule, to be laid down. If there are only three attendants, one must control the legs, and the other two the arms. If there is a fourth, he ought to attend only to the head, which is best held between his knees as he sits on a low stool at the top of the couch. If a fifth attendant be present, he can assist in holding down the legs, which, in the case of a powerful and obstinate lunatic, sometimes require the united strength of two assistants to control. In this way the patient is completely controlled; and finding struggling against such a force useless, he will either cease to resist, or, what is not unfrequent, he will offer of his own accord, or allow himself to be persuaded, to swallow the draught in the usual way. I always make it a point, just before proceeding to the actual administration, and when the patient has found how futile are all attempts at resistance, to represent this fact to him, and to beg him to save me the pain of forcing him to do what he could so easily do himself. If he remain obstinate, I then take care to render him absolutely motionless, seeing that the assistant who has control of the head keeps it perfectly still, with the chin slightly elevated. Then, introducing the end of the funnel gently into one of the nostrils, I pour the liquid slowly into it from a cream-jug or sauce-boat, pausing every now and then to let the patient take a full inspiration, and not allowing the fluid to accumulate in the funnel. A determined patient will generally be able, in spite of the reflex act of swallowing which ensues as the liquid trickles into the pharynx, to sputter a little of it out of his mouth. When such is the case, I pour the contents of the jug faster into the funnel, letting them accumulate in it so as to keep up a continuous series of acts of swallowing. In unusually troublesome cases I have also found it necessary to compress the other nostril so as completely to obstruct all respiration through the nose. By the adoption of either plan the patient is put out of breath, and when you pause for a moment he is glad to take a deep inspiration, and he will afterwards, as a rule, offer no interruption to the further administration of the draught, and will, perhaps, beg to sit up and drink the remainder. I need hardly insist that in these very troublesome cases a medical man ought invariably to administer the draught, as he alone can properly judge of the extent to which it is necessary to interrupt nasal respiration, and of the number of acts of deglutition it is advisable to excite continuously. At the same time if a superior education and a higher social position are calculated to foster and increase gentleness, patience, and the other humanising virtues, it may be reasonably expected that a refractory patient will be less likely to sustain an injury at the hands of a physician than of an ordinary attendant.

In the manner before mentioned, I have administered every kind of liquid and semi-solid food, as milk, beef-tea, soups, eggs, arrow-root, corn-flour, Liebig's extractum carnis, &c.; and every kind of drink, as tea, coffee, barley and rice water, wine, and spirits diluted with water. I have also given in the same way every kind of drug; and, out of an experience of some scores of cases, I have never found the nostrils unduly irritated during the administration, so as to induce sneezing or paroxysmal coughing, as might at first sight be expected; nor have I ever heard the patient subsequently complain of any injury to, or even irritation of, the nostrils; nor have I ever found the trace of a scratch or contusion on the person of a patient fed in this way. Moreover, I have never known the lunatic express any violent resentment at the treatment pursued, nor aver that he had been injured in any way during the administration; and I have invariably found those who asissted at, or witnessed, the procedure express their unqualified approbation of the system. It is surprising to those who have not experience of it, to what an amount of apparent irritation the nares may be subjected without giving rise to discomfort, and what a large quantity of fluid, or semi-solid nourishment may be administered by the nose in the space of a few minutes. In order thoroughly to test these points, I instituted a series of experiments on myself, administering through my own nostrils warm and cold water, diluted brandy, eggs beaten up in milk, &c. In no instance was there produced irritation enough to cause my eyes to water. The sensation could neither be called painful nor irritable, but it was sufficiently unpleasant to make me understand and appreciate the reason why many patients, after a very short trial, prefer to take their food in the usual way. The peculiar feeling lasts but a few minutes after the administration, and is similar in kind to, and certainly not greater in degree than, the sensation of discomfort that follows diving, when the sea-water is forced into the mouth or throat through the nostrils. I found I could with ease swallow in this manner a pint of the mistura vini gallici of the British Pharmacopœia, with the addition of a teaspoonful of Liebig's extractum carnis; and this potion caused less discomfort to the Schneiderian membrane than a similar quantity of cold water. This was due to my having previously warmed the brandy mixture, which further enabled me to swallow the whole pint in three minutes, whereas the cold water was nearly five minutes in being disposed of. These few experiments taught me that the Schneiderian membrane is by no means so sensitive as we are apt to imagine, but that it is more sensitive to cold than even to stimulating liquids. Hence I have deduced, and would recommend to others, the practical rule always to warm whatever is administered through the nose.

It may be asked, why do patients, as a rule, *give in* so much more readily than when food is forced on them through the mouth? There are various reasons for this, I believe. In the first place, most patients, however insane they may be, have a tolerably shrewd appreciation of the power of numbers, and, seeing an overwhelming force arrayed against them in the four or five attendants I have recommended to be summoned on these occasions, and, not exactly knowing what is going to be done, a feeling of alarm often prompts them to give in, even before they are laid down on the couch. The appearance of the physician with the funnel and sauce-boat still further magnifies in their eyes the extent and apparent mysteriousness of the preparations. In the second place, when they are held down on the couch so that every movement is absolutely controlled, the feeling that they are utterly powerless, and that resistance is simply impossible, doubtless often conquers their obstinacy, and leads them to make a virtue of a necessity. At the same time, this feeling of utter helplessness is not agreeable to the natural vanity of any one, sane or insane; the patient feels as if he were being degraded and treated like a child, and in some instances this idea seems to prompt the unconditional surrender. Sooner than again be placed in so humiliating a position, I have seen several patients, who had previously fought desperately against all attempts to feed by the mouth, take their food quietly and in the usual way, after once having had their vanity so wounded. In the third place, when the funnel and sauce-boat have been called into requisition, the sensation, as already stated, is quite disagreeable enough to bring most patients to terms, particularly when the luxury of a stout resistance is so completely precluded.

On the other hand, when food is forced by the mouth, not only are the voluntary muscles of the whole body arrayed against the attempt, but the muscles of the mouth itself, even if the others are thoroughly controlled, can be used as antagonistic agents to the last; and it is wonderful how the patient enjoys to bespatter the attendants with the half-swallowed food. He never feels, as in the other case, wholly in the power of those around him; and, so long as the veriest loophole for resistance is open, he fights to the last, and is ready to fight again. The more he is hurt the more savage he becomes; and he will sometimes even glory in his bruises and abrasions, if he can only trace some of his own handiwork on the clothes or persons of those who forced the food down his throat.

In narrating my experience of this method of administering food, I have explained, in the first instance, its exhibition to the insane. In the advocacy of a procedure as yet untried by the greater part of the profession, it is, perhaps, unwise of me to have first referred to such cases, surrounded, as they always are, by so many repulsive adjuncts; for it is painful to be compelled to use force of any kind to a fellow-creature, and especially to a fellow-creature suffering under so sad an affliction as insanity, — in fact, it is painful even to write about it. But it was in the Hants County Lunatic Asylum, of which I was assistant medical officer ten years ago, that I first saw the plan adopted; and it was in consequence of the good results I derived from its use there, that I was induced subsequently to try it in various diseases and states of the system unconnected with insanity.

Before leaving this class of cases, let me particularly insist on the great advantage, nay more, the necessity, of having a number of attendants sufficient to ensure *absolute* control over every movement of the patient. By this precaution not a mark will be left on his person — not even the smallest abrasion of the nasal mucous membrane. And let me, also, remind the administrator always to have the potion warmed.

My next experience, in chronological sequence, was in the administration of emetics by the nose in cases of extreme intoxication. From 1859 to 1862 I served as assistant-surgeon, R. N., in two line-of-battle-ships, the conjoined complement of which was 2000 men; and during that period I had many opportunities of putting this treatment in practice. It was no uncommon thing to be summoned to see a seaman or marine who had been brought off from shore "dead drunk"—who could neither see, hear, nor feel, and who ran a great risk of losing his life unless his stomach could be speedily relieved of the raw spirit it contained. In such a case it was simply impossible to rouse the man sufficiently to drink anything, and the use of the stomach-pump would have been attended with great inconvenience and difficulty and not a little risk; while the want of resistance on the part of the patient rendered the administration through the nose of an emetic draught—say of sulphate of zinc—all the easier. I never found a case so far gone that the reflex act of deglutition did not follow the passage of the liquid through the nostril into the pharynx.

I have also employed nasal feeding successfully in ulcerated sore-throat, tonsilitis going on to suppuration, glossitis, and recently in the case of an infant who was sinking from inability to swallow. The last-mentioned instance is worthy of further notice, as indicating a class of cases in which this treatment may be most advantageously employed; for medical men are often called to see infants who refuse the breast, who cannot swallow anything by spoon or feeding-bottle, and in whom an enema is not retained. The case I refer to presented exactly these features; and seeing that if neither food nor medicine could be administered my little patient (only six days old) would soon sink, more particularly as the powers of life were at the lowest ebb, as animal heat could with difficulty be kept up, and as he had swallowed nothing for twenty-four hours, I at once determined to try feeding through the nostril—previously injecting a nutrient enema, which, however, was not retained a moment, there being almost complete relaxation of the sphincter ani. The infant lay in an unconscious state, with dilated pupils and difficult breathing, and had shortly before passed a whitish lump of offensive fæces. Its water was passing in considerable quantity. The abdomen was hard and distended with flatus, and the cause of the symptoms seemed referable to hepatic and intestinal derangement. I made use of a male urethral glass syringe; and with this I injected through the left nostril half a wineglassful of its mother's milk, mixed with a small quantity of Liebig's extractum carnis, and five minims of brandy. The child readily swallowed each syringeful, the stomach rejecting a little of the first only. I found it necessary to inject very slowly, letting the liquid trickle from the syringe, just within the orifice of the nostril, and then find its own way through it, while the infant lay on its back on the nurse's knee, with its head slightly depressed. In this way I administered half a wineglassful of nourishment every hour or two hours, till, at the end of twenty-four hours, he had greatly revived. In the meantime I had given him through the same channel a drachm of castor oil, which brought away a considerable quantity of hard, offensive fæces, and his next allowance of maternal milk he managed to suck out of one of Maw's feeding-bottles. From this time he continued to improve, and in twelve hours later, or thirty-six from the time I saw him, he could take his mother's breast. This infant, I have no hesitation in saying, would have died within twenty-four hours of the time I saw him but for this method of feeding; and such, I may mention, was the opinion of two medical men who saw the case with me, and one of whom afterwards saw and approved of the procedure adopted.

The ease of administration in this instance, and the absence of all apparent irritation of the Schneiderian membrane, even after the powers of life were reviving, and in spite of the admixture of brandy, have determined me to adopt a similar practice in every similar case. I made the nurse on several occasions inject the food: and, after seeing me do it several times, she managed it quite as well as I could.

One point in connection with this case I may just note before leaving it, and it is this, that when a tendency to sickness was present, by injecting a few drops at the moment the antiperistaltic action was coming on, it seemed to be arrested in its progress, and a few similar doses appeared ultimately to allay the sickness altogether. The induction of the peristaltic seemed to overcome the antiperistaltic action.

In one case of apoplexy I tried nasal feeding, and, although no benefit resulted, yet I was enabled to satisfy myself of this fact, that a liquid allowed to run through the nostrils into the pharynx finds its way into the stomach without the act of swallowing necessarily taking place, but apparently by sole virtue of its own specific gravity. None of the liquid was found in the bronchial tubes after death, but about two ounces of it, all I had ventured to administer, were found in the stomach, although the reflex act of deglutition had never taken place.

Having now enumerated the cases in which I have tried nasal feeding, it only remains for me to indicate, in a general way, the circumstances in which I think it would prove useful. These are:—

1. In all cases where the condition of the mucous membrane of the mouth is such as to render the ingestion of liquid or solid matter too painful to be borne, as in thrush, or other aphthous conditions of the mouth, ulceration following the destructive action of any corrosive substance, &c.

2. In diseased or inflamed conditions of the tonsils and velum palati, as inflamed or ulcerated sore-throat (scarlatina anginosa and maligna), tonsilitis, tonsilar abscess, &c.

3. In diseased conditions of the tongue, as glossitis, cancer, &c.

4. In tumors of either maxilla obstructing the oral aperture.

5. In some cases of apoplexy, where the reflex

act of deglutition remains, although the voluntary act is lost; and, as shown in the one instance I have mentioned, even in cases where the reflex act itself is lost.

6. In certain forms of partial paralysis, where the arc of reflex action, on which the act of deglutition depends, may remain intact, although the voluntary muscles of mastication, and the other muscles concerned in the voluntary part of deglutition, are paralysed.

7. In lock-jaw.

8. In narcotic poisoning.

9. In poisoning by powerful sedatives, as hydrocyanic acid, digitalis, &c.

10. In alcoholic poisoning.

11. In infantile convulsions, trismus nascentium, and conditions of extreme weakness, where nothing can be administered or retained by any other channel.

12. In insanity, and attempts to commit suicide by starvation.

Other conditions might doubtless be cited, but the above are what occur to me as the most feasible, and I now leave the subject to the favorable consideration of those of my professional brethren who have not heard of, or as yet tried, the expedient proposed.

I should not have ventured to advance so much in favor of this plan of administering food and medicine, were it not, as I believe, comparatively unknown to, or at least untried by, the bulk of the profession. I am well aware that it is by no means unknown in lunacy practice, but even such being the case, I have never met with a detailed notice of it in any medical or other work.

In conclusion, my experience of this method of alimentation, in cases where feeding by the mouth is inadmissible, induces me to recommend it in preference to any other plan; and I hope I have been able to show cause that it should be tried before any other is resorted to,—though not, of course, to the exclusion of any of the other channels by which our efforts at due nutrition may be materially assisted.

Hinde-street, Manchester-square.

AN EXPLANATION

OF

THE CAUSE OF SCURVY AND THE ACTION OF THE DIFFERENT SO-CALLED ANTISCORBUTICS;

WITH SUGGESTIONS AS TO THE BEST MEANS OF PREVENTING THE DISORDER.

By Archer Farr, L.R.C.P., Edin., &c.

There have been many speculations with regard to the cause of scurvy: one authority affirming that it is owing to the absence of vegetables in the food taken; another maintaining that a deficiency of the salts of potash is the cause; while a third gives it as his opinion that it results from bad ventilation, deficient water-supply, wet seats, &c.,—all of which fail to explain the real cause of the disease. That scurvy is not owing to a deficiency of the salts of potash in the food of the sailor, and that salt meat contains all the elements necessary for nutrition, have been proved beyond doubt; while that the belief that fresh succulent vegetables or lime-juice are indispensably necessary to the cure of the disorder is an error, is proved by the fact that beef-tea and milk will effect a cure in the absence of both. If salt meat contains all the elements required for nutrition, how does it produce scurvy? Purely by its hard and indigestible nature as food, and its inability, from its resistance to peptic change, to supply for any length of time all the conditions neccessary for proper digestion. Added to this is man's natural aversion to the continued use of one and only one kind of food for any length of time.

Physiology teaches us that the gastric fluid is secreted only in the presence of food; but that it ceases to be secreted, although food be present in the stomach, as soon as the wants of the system are satisfied. Now, what takes place during digestion where the only food employed consists of salt meat—sometimes of the consistence of buck-horn—and dry biscuit? The food remains in the stomach probably five or six hours, while the wants of the system continue unsatisfied. All this time the stomach is being excited to secretion, while the gastric juice, from this exhausting secretory action, becomes deteriorated in quality, or in the end, perhaps, deficient in quantity: and the result is that the whole digestive process is brought to a stand-still. Scurvy, therefore, is the result of mal-nutrition. But we know that if lime-juice or vegetables be added to the staple fare of salt meat and biscuit, scurvy may be prevented. And the prophylactic power of the lime-juice does not, as is generally supposed, depend upon its having any direct action upon the blood, but upon its immediate action on the contents of the stomach, by serving as the agent by which these hard ingesta become reduced and rendered fit for absorption—in fact, by taking the place of the gastric fluid. Now, what facts have we to strengthen this hypothesis? In the first place, that the solvent power of the gastric fluid depends, for the most part, upon the acid it contains, it having been found to yield, on analysis, hydrochloric, acetic, lactic, malic, and phosphoric acids; one being capable of taking the place of the other. Hence it is that the acid wines and vinegar become antiscorbutics. Secondly, that the solvent effect of the different acids upon the fibrin of meat is well known, and is taken advantage of in making analyses of the contents of the different viscera in in medico-legal investigations. We learn by experience that saur-kraut, spruce-beer, oranges, lemons, and their juices, and all kinds of esculent fruits and vegetables, possess more or less so-called antiscorbutic properties; also, that the acid wines, vinegar, brandy, molasses, pickles, and sauces tend greatly to prevent the occurrence of scurvy—indeed, it would be difficult to name anything contained in the category of eatables and drinkables which does not possess, to a greater or less degree, some antiscorbutic value. Now, it must be patent to all who possess the smallest knowledge of chemistry, that if vinegar and brandy serve at all to prevent the disease, it cannot be owing to the salts of potash they contain; while it is equally certain that they must operate in a manner quite different from that in which potatoes and green vegetables effect a cure. The juice of the lime and lemon, acid wines, beer and vinegar, act by virtue of their solvent effect upon the food contained in the stomach; whereas alcohol can only act through the medium of the circulatory system. The secret of vegetables and fruits being so potent as antiscorbutics is this:—The alimentary canal may be very appropriately termed a double organ, inasmuch as the animal food is digested by the stomach, and the vegetables by the intestines. Hence man has two distinct appetites, one for each kind of food—the animal and vegetable. He may eat to repletion of the one kind, and then partake heartily of the other. Is it not fair to assume, then, that, in the case of the scorbutic patient whose stomach digestion has been most imperfect, the intestines, which for weeks have been almost wholly unemployed, should, upon the accession of vegetable food, play an active part in supplying the necessary nutritive material to the system? Scurvy is to be prevented, then, in two ways; either by employing the stomach better, or by giving the intestines more to do.

Food should be so constituted as to contain within it the materials from which may be drawn all the primary elements of the blood; and no one kind of food is so rich in these as flesh, the fibrinous portions being the most essential. It is true that wherever scurvy has happened, whether on land or sea, it has always been in the absence of vegetable food; but what other condition is there that strikes one? That the fibrinous and albuminous portions have *always* been deficient in the *materia alimentaria* supplied, or they have been presented in such a form as not to admit of their being, for any length of time properly and effectually reduced; the latter being the case where salt meat has been the cause, and the former where bread, tea, coffee, bacon, cheese, &c., have formed the diet under which an outbreak of scurvy has taken place. We have sufficient proof that the fibrinous and albuminous principles play a most important part in eradicating scurvy in the fact that vegetables will sooner effect a cure when combined with salt meat than when administered alone, and still quicker conduce to such result when taken in conjunction with fresh meat. And, again, a healthy, growing youth, with craving appetite, whose stomach is equal to any emergency in the way of food, will outlive a much longer voyage on salt meat and biscuit than the man in middle life with fastidious stomach; although in the case of the youth the demands of the system for food are greater, in order to supply the wants of a growing frame. What stronger arguments can be adduced in favor of my theory? What greater proof can we have, in opposition to the prevailing opinion, that vegetables are chemically antiscorbutic—that they supply a something which meat does not possess, and which the body requires? The four varieties of food necessary for the maintenance of nutrition are represented in bread and butter, and how commonly do we see well-nourished, blooming children living almost exclusively upon it. But the fibrinous and albuminous principles contained therein being proportionately very small, it would fail to supply the necessary muscle-making material were it not for the child's astonishing capacity for consuming its own weight of such food in a comparatively short time. The adult in attempting to live exclusively upon bread and butter would find that he could not eat sufficient to sustain him. And hence it is that children will thrive under the same conditions that infallibly conduce to scurvy in the adult. It is remarkable that the many different authors writing upon this subject should not have observed this.

The great desideratum, then, in catering for the mercantile marine, with a view to prevent the occurrence of scurvy, should be that the sailor be provided with good flesh-food; and since salt meat must of necessity always form the basis of his dietary, every care should be taken that it be of recent pickle, bad salt meat being too commonly the cause of the disorder. Nothing would tend more to stamp out scurvy from our seas than Government making it compulsory on shipowners not to ship their meat-supply as salt meat, but compel them to take it in as fresh meat, and thus ensure its being laid down in the brine within a week of the vessel's sailing. This plan could not fail to secure to the sailor a supply of wholesome meat, whereas, as the law stands, he may have palmed upon him the vilest trash, the pickle-tub being made the receptacle of all that is loathsome. The carcase once in the brine, there is an end to all history as to its mode of death; neither do we know how long it may have been "sepulchred below;" and consequently many a ship is sent to sea with scurvy in the tub.

It has been observed by Dr. Barnes and others, that the period required to produce scurvy, under conditions favorable to its development, seldom exceeds eight, and is never less than six weeks; and when we consider this, it at once becomes obvious what good results might be expected from making the dietary scale of the seaman as liberal as possible during the first month of his voyage, by allowing him, as far as would be found practicable, a change of flesh food, and by so combining it that it should present as great variety as possible. The commencement of scurvy is aversion consequent upon the continued use of one kind of food. Man is essentially an omnivorous being, and naturally seeks a miscellaneous diet. He cannot tolerate cold mutton many days in succession, even when accompanied with a goodly supply of vegetables; and the greatest delicacy, if supplied for a continuance, becomes a contemptible dish with him. And if this be true, we cannot wonder at the stomach revolting at the continued use of salt meat and biscuit.

Again, bulk of food is most necessary to nutrition, digestion being carried on best when the stomach is moderately full. How ill-designed are salt meat and biscuit to fulfil this condition! Of those for whom these constitute the only food, the stomach is never full—seldom empty.

A much lighter and more digestible form of sea-biscuit is required, and best of all would be one containing bran.

Dried meat would be found of incalculable value on board ship, the advantage meat so prepared presents being that it may be served up in different ways, as roast or boiled, or in the form of curry, soup, &c., thus supplying that change of food which is so desirable both for the comfort and health of the individual.

And with regard to the supply of vegetable food for the sailor: potatoes, parsnips, onions, and artichokes may be so packed as to last a whole voyage, and, if served out to the crew twice a week only, with the dried meat as suggested, would suffice to prevent the occurrence of scurvy, and that in the absence of lime-juice. If lime-juice, when taken with salt meat and biscuit, will prevent scurvy, why should the sailor be compulsorily driven to subsist upon these alone?—taking the lime-juice not because it is agreeable to him, but in the same way and with the same object as he would take a dose of medicine.

Dr. Barnes has said that "scurvy may be prevalent in the fŏrecastle, but it is never known in the cabin. If the captain and mates know how to preserve themselvés, they know how to preserve their men."

In emigrant ships, to those who pay for their board such food is provided as would render an outbreak of scurvy impossible. Why, then, should the poor seaman be less cared for, on whose health and on whose willing hands the safety of the craft depends? That he should be fed on *worse* than prison fare while facing the storm and encountering the many dangers of the deep is a lasting scandal upon our shipping community.

Another striking picture Dr. Barnes gives, in his account of scurvy in the merchant service, is: "The plight in which the poor sailors are admitted to the *Dreadnought* is pitiable to witness. Disabled by hardship, semi-starvation, and ill-usage of every kind, they are cast out with the same indifference with which a worn-out block would be thrown overboard. The means of preventing scurvy are well known and easily adopted, and he who would withhold from the sailor those conditions which are necessary to life is just as culpable, and should be as amenable to the law, as the one who would seek to undermine the health of another by the administration of some deleterious substance."

To recapitulate then,—

1st. So long as the food of the sailor is so composed as to need the addition of lime-juice, scurvy can never be effectually prevented.

2d. Lime-juice will always be necessary while salted meat is the only flesh food employed.

3d. Salted meat as a cause of scurvy is not owing to its deficiency in the salts of potash or any other element.

4th. Lime-juice cures or prevents scurvy, not by virtue of its salts of potash, nor by exerting any direct influence upon the blood, but by serving as the agent by which the food becomes reduced, and rendered fit for absorption by taking the place of the gastric fluid.

5th. Green succulent vegetables, in the absence of lime-juice, are not indispensably necessary to the prevention of the disease.

6th. Change of flesh food is indispensably necessary to its prevention.

◆

ON THE

ALLEGED EFFICACY OF THE PEROXIDE OF HYDROGEN AND OZONIC ETHER AS REMEDIAL AGENTS IN DIABETES MELLITUS.

By F. W. Pavy, M.D., F.R.S.,

Assistant-Physician to and Lecturer on Physiology at Guy's Hospital.

The question has been so often put to me by medical men and patients, "Have you tried the peroxide of hydrogen in diabetes? and if so, with what result?" that I venture to think a few remarks upon the subject, embodying the result of my experience, may prove of interest to the readers of The Lancet.

Amongst the various remedies that have from time to time been proposed, upon theoretical grounds, for diabetes, oxidising agents hold a prominent position. It has been a favorite idea to regard this disease as arising from a defective oxidation of sugar in the system Bernard even admits that at one period he was inclined to look upon the artificial diabetes arising from his operation of puncturing the floor of the fourth ventricle as due to a disturbance of respiration leading to an imperfect combustion of sugar in the system. He continues by stating, however, that he was obliged to abandon this theory in the presence of new facts with which it did not accord; and afterwards asserts that it is not by combustion that sugar disappears in the system.

As oxidizing agents, the permanganate and perchlorate of potash have been, in their turn, proposed; and, more recently, attention has been bestowed upon the peroxide of hydrogen and ozonic ether. A case reported by Dr. Day of Geelong, in the pages of The Lancet for Jan. 11th, 1868, brought these latter agents into prominent notice, and led to high expectations being entertained regarding their efficacy. Dr. Day, after dieting a patient suffering from diabetes, and trying the various medicinal remedies recommended for the complaint, without effect, began to reflect in the following manner upon his case: "While pondering," he says, "over the hopeless condition of my patient, it occurred to me that if I could oxidize the sugar that had been taken up in the general circulation, it would be an approach towards the natural mode of its elimination by the lungs. With this object in view, I gave half-drachm doses of the ethereal solution of peroxide of hydrogen, mixed in an ounce of distilled water, three times a day." From the report that follows, an astonishing improvement took place in the state of the patient; and in seventeen days, in the place of an extreme state of distress, we find her condition stated to be as follows: "Says she feels as well as ever she did; never felt better in her life."

Looking at this case as it stands, nothing could be more satisfactory than the result depicted; and I am sorry, for the sake of therapeutics and those suffering from diabetes, that my own experience does not substantiate the conclusion that might be drawn from it. I have tried both the aqueous and ethereal solutions of peroxide of hydrogen in the complaint, but have not been able to perceive that the slightest benefit has been produced.

A few weeks after the report of Dr. Day's case appeared, I tried the aqueous solution of peroxide of hydrogen in several cases, and closely watched, with the assistance of the students of Guy's Hospital, the result. The agent was obtained from Mr. Robbins, of Oxford street, and administered in two-drachm doses three times a day. There was not the slightest effect traceable upon the quantity of urine, quantity of sugar passed, or the symptoms of the patient. One patient, indeed, expressed himself rather indignantly upon having what he conceived to be only water administered to him.

I have since tried the ethereal solution of peroxide of hydrogen, or, as it is called, ozonic ether; and will furnish the details of a case in which I have recently employed it in Guy's Hospital, and in which a daily analytical examination of the urine was made.

The patient, a man aged twenty-nine, had been the subject of diabetes, without any complicating affection, for a period of nearly a year. Upon admission into the hospital, he was placed upon a restricted diet, the food allowed consisting of meat, bran biscuits, eggs, greens, and beef-tea, with three ounces of brandy a day. An astringent mixture had recently been ordered, to check diarrhœa, from which he was temporarily suffering. For five days before the ozonic ether was commenced, the state of his urine was as follows:—

Date.		Quantity of urine per 24 hrs. in oz.		Sp. gr.		Quantity of sugar per fluid oz. in grs.		Quantity of sugar pr 24 hrs. in grs.
Dec. 16th	...	100	...	1033	...	26½	...	2650
17th	...	110	...	1036	..	28¾	...	3162
18th	...	100	...	1037	...	24¾	...	2475
19th	...	95	...	1031	...	19½	...	1852
20th	...	100	...	1039	...	30	...	3000

Ozonic ether was now administered in half-drachm doses with water four times a day, and without any other medicinal agent. No alteration was made in the diet. The diarrhœa, under which the patient had been formerly laboring, had previously disappeared. The ozonic ether was continued for nearly three weeks; and the following is an account of the state of the urine during the time:

Date.		Quantity of urine per 24 hrs. in oz.		Sp. gr.		Quantity of sugar per fluid oz. in grs.		Quantity of sugar pr 24 hrs. in grs.
Dec. 21st	...	90	...	1039	...	31¼	...	2812
22nd	...	100	...	1038	...	22½	...	2250
23rd	...	100	...	1035	...	24	...	2400
24th	...	110	...	1033	...	19¾	...	2172
25th	...	110	...	1025	...	20	...	2200
26th	...	100	...	1029	...	24	...	2400
27th	...	110	...	1030	...	25¾	...	2832
28th	...	115	...	1030	...	22½	...	2587
29th	...	120	...	1034	...	19	...	2280
30th	...	115	...	1032	...	20½	...	2357
31st	...	110	...	1039	...	28¾	...	3162
Jan. 1st	...	120	...	1030	...	25¾	...	3090
2nd	...	120	...	1031	...	19¾	...	2370
3rd	...	110	...	1033	...	21¼	...	2337
4th	...	110	...	1037	...	32¾	...	3602
5th	...	120	...	1034	...	27¾	...	3330
6th	...	110	...	1035	...	31¼	...	3437
7th	...	110	...	1037	...	27¾	...	3052
8th	...	120	...	1037	...	32¾	...	3930

It will be seen from the above report that there was no marked effect either one way or the other observable upon the urine. What slight effect there was, was the reverse of improvement, the urine being higher in quantity, and the sugar larger in amount, towards the end of the period during which the ozonic ether was administered than at the commencement. The patient, as regards his general feelings, expressed himself as not perceiving much difference: if anything, he thought he had been feeling a little more thirsty, and that his appetite was not so good.

I have come across several cases in private practice in which the ozonic ether has been tried. In none have I been able to learn that any benefit was produced. Indeed the fact of the patients coming to me may be taken as affording evidence that the result was not satisfactory. One patient whom I have recently been attending was glad that I proposed making known my experience, as he had been worried on all sides by this friend and that to try the new remedy for diabetes, as it was called. He took it for two months, and in speaking about it expressed himself in anything but friendly terms towards it. He had lost his appetite, he said, under its use, and I had to listen to a category of other evils that he was sure had been produced by it.

Dr. Richardson, the first prominent advocate of the peroxide of hydrogen as a therapeutic agent, has recently spoken about it in relation to diabetes, and what he has said agrees with the conclusion derivable from my own experience. He states that his first object in introducing the peroxide of hydrogen into medicine was to test it as a remedy for diabetes. After fairly trying it in eleven cases, he sums up: "I am obliged, with regret, candidly to state, that at this moment there is no proof that peroxide of hydrogen is of specific value in the treatment of diabetes." Dr. Richardson also alludes to the employment of ozonic ether in diabetes, but refers only to the experience of others, saying, "I have as yet no sufficient evidence of the value of the ethereal solution in diabetes to enable me to speak with authority."

At present I have only looked at the matter practically; but now let us look at it theoretically, and see what the alleged remedy is capable of doing towards oxidizing the sugar that is being discharged,—for it is upon the ground of its oxidizing influence, and not upon that of any dynamic effect, that its efficacy has been based. It must first of all be admitted that the peroxide of hydrogen can exert an oxidizing influence over bodies that may escape being oxidized by the oxygen contained in the atmosphere. What I propose is, to allow, for the sake of argument, that the oxygen at disposal in the peroxide of hydrogen may contribute towards the oxidation of sugar; and, taking the amount administered, ascertain how far it can exert any material effect in diminishing the discharge of sugar from the system.

As an example, let it be supposed that we are dealing with the case of a patient who is passing eight pints of urine in the twenty-four hours, charged to the extent of 40 grains to the fluid ounce with sugar; which, unless strict attention is paid to diet, is only a moderate representation. Eight pints of urine containing 40 grains of sugar to the ounce will give 6400 grains as the amount of sugar passed during the twenty-four hours. The composition of grape-sugar is such ($C_{12}\,H_{12}\,O_{12}$) that the oxygen contained in it just suffices to oxidize and form water with the hydrogen; whilst the carbon, to be oxidized, must be supplied with oxygen from an external source. Now, as sugar contains 40 per cent. of carbon, it follows that in the 6400 grains estimated above as being discharged during the twenty-four hours, we shall have 2560 grains of carbon for oxidation. To convert this into carbonic acid will require 6826 grains of oxygen, which is equivalent in volume to 19,854 cubic inches. Thus, to bring about a disappearance of sugar from the urine by oxidation in our presumed case, 19,854 cubic inches of oxygen must be supplied by the oxidizing agent administered. Let us next see how far the ozonic ether and aqueous solution of peroxide of hydrogen will contribute towards doing this.

The ozonic ether is stated by the manufacturer to contain 30 volumes of oxygen under the form of peroxide. It is usually administered in half-drachm doses; and, supposing 4 doses a day to be given, the oxygen for disposal introduced into the system would amount to just about 13 cubic inches. So, with the aqueous solution of peroxide of hydrogen. This is asserted to be charged with 10 volumes of oxygen, and the ordinary dose of it is a couple of drachms. Let us suppose, again, 4 doses a day to be given; these would contain rather over 17 cubic inches of the gas.

Here we have, then, a supply of, say, 13 cubic inches of available oxygen by our remedial agent in the one case, and rather over 17 cubic inches in the other, against 19,854 cubic inches required to oxidize the sugar escaping in our example drawn from an ordinary case of diabetes!!

Looked at from this point of view, to seek for any beneficial effect from the peroxide of hydrogen upon the ground on which it has been proposed as a remedial agent in diabetes is nothing less than a *reductio ad absurdum.* The amount of oxygen supplied stands, it may be said, in a ludicrous position by the side of the amount of oxygen required for the oxidation of the sugar discharged.

Grosvenor-street, March. 1869

A FEW REMARKS ON TRACHEOTOMY; WITH CASES.

By T. R. Jessop, F.R.C.S.,

Lecturer on Physiology at the Leeds School of Medicine,
Surgeon to the Leeds Public Dispensary, etc.

There are few occasions for surgical interference where an opportunity is afforded of exhibiting the benefits to be derived from prompt action in so striking a manner as those on which the surgeon is called upon to perform the operation of tracheotomy. Usually, whatever may be the ultimate result, the *immediate* relief is so apparent that the hopes of all interested are at once raised to the highest pitch. It occasionally happens that help comes too late, that the opening into the air-passages is delayed too long, or that, suffocation suddenly taking place, there is not time to obtain the aid of the surgeon before the patient is dead. I have more than once heard the surgeon, on finding that respiration had stopped, and that the heart had ceased to beat, exclaim, as he left the bedside, "Had I been here five minutes earlier, I might have saved the life by opening the trachea."

One of the cases related in this paper will show the possibility of restoring animation under circumstances which may at first sight seem hopeless.

We have ceased to be astonished at the remarkable instances recorded of life brought back, as it were, to bodies apparently dead from long submersion in water. We should hold ourselves blameworthy if we neglected in any case of drowning, when the body is known to have been alive half-an-hour before, to make diligent use of artificial respiration, and all those other means which are now so universally and effectually applied. And when we bear in mind that in many cases of persons suffocated the conditions are in no way different from those in the drowned, except that the nature of the obstruction in the air-passages requires that an opening in the trachea shall be made—when we bear in mind that in both cases the primary cause of death is the stoppage to the interchange of gases in the cells of the lungs, and that *death does not actually take place for some considerable period after that interchange has ceased*—that, namely, respiration, and in consequence circulation, may be arrested and kept at a stand-still over a considerable space of time, before that state is arrived at, whatever it may be, when vitality has irrevocably fled,—it is difficult to understand why in the one case we should turn away regretting simply that we were not summoned at an earlier period, whilst in the other we diligently persevere with our remedial agents until our efforts are crowned with success or all hopes of restoration have gone. That reward will sometimes wait upon perseverence is sufficiently proved by the following case, which occurred to me during my house-surgeoncy at the Leeds General Infirmary.

Case 1.—Mary M'G——, aged fourteen, a street-dancer and stilt-walker, from Manchester, was admitted into the Leeds General Infirmary, under the care of the late Mr. Samuel Smith, on the 30th of May, 1862, in consequence of hypertrophy of the thyroid body, attended by some dyspnœa which at times assumed a somewhat violent character, and was then accompanied by noisy inspiration. A careful examination failed to elicit any other cause for the paroxysms of difficult breathing than the enlargement of the thyroid body. The hypertrophy, though marked, was not excessive, was of the usual simple character, unaccompanied by exophthalmos or heart-murmur, involved all three lobes equally, and the middle one lay apparently in its usual position across the front of the upper part of the trachea. The disease had commenced about a year before her admission, and had steadily advanced, the difficulty of breathing keeping pace with the enlargement of the neck.

During the first fortnight of her stay in the hospital an iodine lotion was applied to the neck, and the tincture of iodine given internally, without any apparent result. The size of the thyroid was undiminished, and the difficulty of inspiration remained the same. As the attacks had never been of an alarming character, no extraordinary precautions were taken.

About half-past six on the morning of June 13th, exactly a fortnight after the patient's admission, the night nurse came to my room—in compliance with my requirement, that every nurse should inform me when any of her patients died, whether expectedly or unexpectedly,—and, rousing me, said: "Mary M'G—— has just died in a fit, sir." I lost no time in reaching the ward in which the patient was. My bedroom, however, was at one end of the building and the patient was at the opposite end, and on the floor above me. On arriving at the bedside, I found the girl duly "laid out," and surrounded by the large screen, which was made use of for isolating the dead. The face was livid, and no sign of life was manifest. Feeling certain that the patient must have been suffocated, I ran to the operation-room, which is situated in the centre of the building, and on the floor above that on which the patient lay, procured the necessary instruments, ran back to the ward, had the body lifted from the bed on the floor, which had been made there owing to the crowded state of the house, and placed upon another patient's bed; and I then opened the trachea. The depth of the wound was so great that the ordinary tubes were found to be of no use. I therefore held the wound open by means of a pair of long forceps introduced, whilst assistants, who had in the meantime been summoned, performed the movements for artificial respiration, as directed by Dr. Marshall Hall. Air entered, and was expelled freely with each set of movements. The body remained quite warm, and every now and then, at very long intervals of many minutes, I thought I could detect a slight fluttering of the heart; but, with these exceptions, no sign of life was manifested until a few minutes before 8 o'clock—nearly an hour and a half after I was called, and, according to the nurse's statement, fully an hour and three quarters after the girl was supposed to have died, —when a single distinct and convulsive inspiration was observed. Shortly, in from forty to sixty seconds, another followed; and subsequently breathing became by slow degrees established, and with it pulsation at the heart and wrist. The artificial respiration was continued until about 8.30, when it was no longer needed. The patient remained perfectly unconscious all that day and the next, and became able to recognize those around her only at about the end of forty-eight hours.

As soon as the immediate danger was over, a silversmith was directed to make a special tube, of twice the ordinary length; and in the mean time the wound was kept open by an assistant with a pair of long forceps. Her recovery was uninterrupted. At the end of a week, without any further treatment having been adopted, the enlargement of the thyroid had diminished very considerably. In three weeks she sat up, and at the end of two months the thyroid body was only slightly larger than natural; and yet the trachea was so deep that the long special canula alone would reach it.

When the canula was removed to be cleaned, the opening contracted so rapidly that it was found necessary to have a second tube made, in order that it might be introduced immediately on the withdrawal of the first. On August 30th, the introduction of the clean canula having been neglected on the withdrawal of the obstructed one, the wound was found to have contracted so much that it became necessary to enlarge it with a bistoury before the tube could be reintroduced. In consequence of the difficulty experienced each time the tube was cleaned, it became necessary that the girl should be kept in the hospital; and accordingly she was hired as a cleaner, the duties of which office she continued to perform until the end of 1865, when, after a sojourn of three years and a half, she left the hospital, still wearing the tube. I often tried to induce her to give up the use of the tube, but in vain, as the distress of breathing invariably recurred when in a very few minutes the opening narrowed, and then it became a matter of some difficulty to reintroduce the tube. There was no appearance of disease on laryngoscopic examination, and on closing the orifice of the tube the patient could speak with a bass voice and breathe with tolerable facility.

Cases of threatened suffocation every now and then occur, in which, from the nature of the disease, or from the exhausted condition of the patient, the propriety of prolonging his sufferings, or of increasing his distress, for the sake of gaining a short addition to his life, by the performance of the operation of tracheotomy, may be fairly questioned by the surgeon; and it becomes a matter of much difficulty to decide whether we shall allow our patient to die at once, or we shall hold out a pain-inflicting hand, which can at the best but give him a short respite. In such cases we shall do well, I think, to take into our consideration, not only the number of days we are likely to add to our patient's life, but also the probable *mode of his death*. The struggle for breath in the suffocated so completely monopolises his every thought, and is so distressingly painful for relations and friends to witness, that it is very desirable, to say the least, we should if possible substitute a calm and quiet departure—one more suited to the solemn and momentous occasion. And it will sometimes happen, as in the first of the next two cases, that the prolongation of life will far surpass our expectations.

CASE 2.—Henry R——, aged thirty-four, was placed under my care by a benevolent, though distant, relative of his, in May, 1865. In November, 1864, he began to suffer from cough, which was soon afterwards attended by copious expectoration, night sweats, great loss of flesh, and hoarseness of voice—symptoms which, attributed to phthisis, had been met by the administration of cod-liver oil and medicines. When I first saw him he was very thin, and looked extremely ill. I could not detect any sign of phthisis on examining his chest; but his symptoms pointed unmistakably, as I thought, to that disease. He was almost aphonic, and yet the vocal cords appeared healthy. In the following month (June) I observed, by means of the laryngoscope, a swelling posterior to, and on the right of, the larynx, which displaced that organ towards the left of the middle line; and, on examining the neck externally, a distinct thickening could be felt deeply situated on the right side of the larynx. From this time the growth rapidly enlarged, projecting outwardly at the side and on the front of the neck, and encroaching upon the cavity of the larynx within. His strength daily diminished, and his breathing became more and more impeded. On the 23d of July, about six weeks after the first detection of the disease, immediate death by suffocation was averted by my opening the trachea. The relief to the urgent symptoms was of course decided; and for some weeks he positively gained flesh and strength, was able to sit up, and passed his time in tolerable comfort. Meantime the tumor rapidly enlarged; and towards the end of October his strength visibly failed. He died from exhaustion on Nov. 9th, having survived the operation nearly sixteen weeks. The tumor, which was found to consist of encephaloid infiltration of all the tissues in the neighborhood of the larynx, and formed a very large and prominent mass on the side and front of the neck, was exhibited by me before the Pathological Society in 1866.

CASE 3.—Richard D——, aged fifty-two, applied to me on the 31st day of August, 1865, on account of difficult breathing, which had for some months been gradually increasing. He was spare and sallow. On laryngoscopic examination the epiglottis and borders of the larynx were found to be thickened and ulcerated, and to the touch they felt hard and rigid. The vocal cords were not implicated in the disease, but were much limited in their movements. Inasmuch as he stated that he had contracted syphilis ten years before, although I felt convinced, from the situation, the appearance, and the feel of the diseased parts, that the affection would prove to be epithelioma, I deemed it right to put him at once under treatment suited to that disease. I accordingly prescribed mercurial ointment to the arms, and ten grains of iodide of potassium in two-ounce doses of the syrup of sarsaparilla three times daily, and swabbed the parts on alternate days with a strong solution (ten grains to the ounce) of nitrate of silver.

The disease continued to advance, and the breathing became daily more embarrassed, until the 26th of September, when, as suffocation became evidently imminent, I opened the trachea. He rapidly improved, and at the end of a week was able to sit up. He now, however, began to experience considerable difficulty in swallowing food, and more especially liquids, which almost invariably found their way into the trachea, and were expelled in astonishingly large quantity through the tube. Whilst taking some broth on the 18th of October—twenty-two days after the operation —he suddenly died. A post-mortem examination could not be obtained, but on removing the tube it was found partially blocked up with a piece of meat.

Widely different from the last are the cases where a foreign body has accidentally slipped into the windpipe. In these, the surgeon does not hesitate, after having failed to extract the offending substance by other means, to open the trachea without delay.

The following case presents some points of interest: the somewhat unusual length of time which elapsed between the entrance of the foreign body into the larynx and the operation, and again between the operation and the escape of the foreign body; the little mischief set up by the long sojourn of the nutshell in so delicate an organ as the larynx, when that organ was no longer being made use of; and, lastly, the advantage of making a large opening when operating for the removal of foreign substances.

CASE 4.—On the 4th of June, 1867, I was asked by Dr. Young, of Headingley, near Leeds, to see with him George R——, aged four years, who, on the afternoon of the 2nd of June, whilst laughing at play, had accidentally drawn into the larynx a portion of nutshell. A violent paroxysm of difficult breathing was the immediate consequence; but as this gradually passed off, and the little fellow resumed his play, little was thought of it. During the night and day following, occasional attacks of dyspnœa occurred, but always passed away in a short time. Early on the morning of the 4th of June, however, he was seized with a paroxysm of more than usual severity, and his voice dropped to a whisper—a condition of things which hourly increased, and was evidently about to culminate in complete suffocation when I saw him at midday. With Dr. Young's assistance, I made a large opening into the trachea, and inserted a correspondingly large tube.

Immediately after the operation the child's condition seemed to be so critical that we deemed it prudent not to make any attempt to remove the nutshell, which had evidently stuck fast in the larynx, and offered, therefore, no obstruction to the ingress and exit of air. On the following day the child rapidly improved, and suffered little apparently from the effects of the operation. On closing the orifice of the tube he was unable to breathe or speak, and as it was evident, from the resistance he offered to any examination, that it would be necessary to administer chloroform before making any attempt at the removal of the foreign substance, I preferred waiting, in the absence of any sign of irritation in the larynx, until he was quite convalescent.

On the afternoon of June 22nd—eighteen days after the operation—he was seized with a violent fit of coughing, which terminated in the expulsion through the tube of the nutshell—a piece consisting of about one-fourth of the shell of an ordinary Barcelona nut. Immediately after the expulsion of the foreign body he was able to speak with a rough voice on closing the orifice of the tube. In order to facilitate the recovery of the larynx from any damage it might have sustained from the long irritation to which it had been subjected, I kept the tube in until the 2nd of July. The child's recovery was afterwards uninterrupted.

In conclusion, I have two suggestions to offer for the improvement of tracheotomy tubes as ordinarily constructed. A remark commonly made after performing the operation is, "How much deeper the trachea is than it seems to be!" We may go further with our reflections, and add, "How much deeper the trachea is in the living than in the dead!" In private practice, where the patient resides at a distance from the surgeon, it is no unusual circumstance to be told, on making the morning visit, that the patient, especially if it be a child, has died after a violent fit of coughing during the night. And if the throat be examined, it will not unfrequntly be found that the tube has been forced out of the trachea, and is lying irregularly in the wound; that, in fact, the child has died suffocated, because the tube was only just long enough to reach the trachea, and has therefore become readily displaced during the act of coughing, or in swallowing. The ordinary tracheotomy tubes would seem to be made to correspond with the apparent, and not with the actual depth of the trachea—to reach the trachea of the dead and not of the living. Those I am in the habit of using are nearly half as long again as the ordinary tubes, and I find them very advantageous. I had them made after losing two children in the way I have described above.

My second suggestion—the principle of which is, I believe, recognised, but is not sufficiently appreciated by instrument makers,—is, that the two blades of the outer canula should be made so that they lie in *close apposition* at their distal extremities, and are separated only by the introduction between them of the inner canula.

By the adoption of this means the most difficult step in the operation of tracheotomy—viz., the introduction of the canula through the slit in the trachea will be much facilitated.

Leeds, 1869.

PULMONARY EMPHYSEMA IN CONNECTION WITH GOUT.

By E. Headlam Greenhow, M.D., F.R.C.P.

In a clinical lecture which appeared in The Lancet in 1867, I expressed the opinion that degeneration of the tissue of the lungs, resulting from some constitutional vice, not unfrequently leads to the spontaneous development of extensive pulmonary emphysema, and I adduced several cases in support of that opinion.

This form of the disease, however, which I then termed constitutional or substantive emphysema, for the most part advances very gradually, and is attended in its earlier stages by very slight inconvenience. It therefore seldom comes under medical observation until an attack of bronchitis, to which it strongly predisposes, has aroused the patient to a sense of his condition, by aggravating the shortness of breath, which had crept on so imperceptibly as to have been previously overlooked. As a natural consequence of these facts, cases of constitutional or substantive emphysema may be, as I believe they are, not rare in themselves, and yet very rarely observed or recorded. And hence, although an exclusively mechanical theory has of late years been generally considered insufficient to account for the origin of pulmonary emphysema, the existence of cough is, at the same time, still generally regarded as necessary to its causation. Additional experience, however, only serves to confirm the opinion I expressed two years ago, and to convince me that in a hitherto unsuspected number of cases neither cough nor any other extraordinary cause of mechanical distention of the air-cells has been in action; but that the emphysema has resulted simply from the incompetency of the degenerated tissues of the air-cells to resist the ordinary pressure incidental to many of the occasions of daily life.

This view appears to me to be one of great importance in its therapeutical bearings; for when cases of bronchitis associated with emphysema come under treatment, the ulterior management of such cases will be materially guided by the opinion we may hold with reference to the cause of the emphysema. If it be regarded as a mere secondary result of the bronchitis, then our efforts will be exclusively devoted towards curing the existing attack of that disease, and warding off future attacks. But if, on the contrary, the emphysema be regarded as a substantive ailment, due to loss of tone and elasticity of the lung-tissues, arising from some constitutional cause, we shall then aim further at retarding, by special constitutional treatment, the process of degeneration from which the emphysema has resulted. A brief record of a case of substantive emphysema, which has recently been under my care, may therefore, perhaps, be considered as not devoid of practical interest.

Francis Y——, aged fifty-six, a bricklayer by trade, was admitted into the Middlesex Hospital for acute gout, in November, 1868, under the care of my colleague, Dr. Thompson, who found, on examining his chest, that he was the subject of general pulmonary emphysema. As the patient positively stated that he had never had bronchitis, nor illness of any kind attended by cough, Dr. Thompson invited me to examine him, and then transferred him to my care. I found no evidence of gout in his family history, but his mother and one sister had died of phthisis and a brother of psoas abscess. The patient himself was a tall, stout man, of florid complexion, and frankly admitted that he had for many years been a hard drinker, especially of porter. He had, nevertheless, been a perfectly healthy man until his first attack of gout, four years before his admission. He was now suffering from his fifth attack of regular gout, and he had also had sciatica and frequent flying pains in the lower limbs.

At the time of his admission he had acute gout in the ball of the right great toe and in the right index finger, besides which several joints in both hands were chronically enlarged and tender on pressure. The chest was broad and deep, and markedly hyper-resonant over both its anterior and posterior aspects; a perfectly clear note being elicited by percussion even over the præcordial region. The breath sounds were feeble, and quite as audible below and around the left mamma as over any other part of the thorax. The vocal vibration was also very feeble. The impulse of the heart could neither be seen or felt in the normal situation, but it was seen beating feebly in the epigastrium, where its sounds were also faintly audible. There was no cardiac murmur. The pulse was 80, weak and compressible; the respirations were 16 in the minute. The urine was acid, of low specific gravity, and perfectly free from albumen.

The patient was not himself conscious of any dyspnœa, and declared that he had never at any time suffered from cough; but I elicited from him that he sometimes raised, without trouble, a little frothy mucus after rising in the morning. He was discharged in December, when the gout had been relieved, and has not since been seen.

I have already, in the lecture referred to at the commencement of this communication, called attention to the large proportion of cases in which I have found a gouty diathesis subsisting in connection with substantive emphysema: a proportion so large, in fact, that I have been led to the conclusion that an intimate relation often exists between the gouty dryscrasia, and the loss of tone and elasticity in the lung-tissues, which leads to the development of pulmonary emphysema. The case just related is another example of this connection; and although the gouty dyscrasia in this patient appears to have been acquired and not inherited, there is no reason to suppose that gout is less likely to predispose its subject to emphysema when it has resulted from long intemperance, than when it has been transmitted by hereditary descent.

Upper Berkeley-street, March, 1869.

CASE OF DIABETES TREATED WITH THE PEROXIDE OF HYDROGEN.

By W. H. Day, M.D.,
Physician to the Samaritan Free Hospital, and to the Infirmary for Consumption and Diseases of the Chest, Margaret-street.

I venture to hope that the following case will not be without interest to the profession, and I trust that those who have frequent opportunities of seeing diabetic patients will record their experience of the real value of this new remedy. One or two successful cases are not enough to warrant judgment of the merits of any drug; we must have case after case yield which has obstinately resisted other therapeutic measures before we can pronounce on its worth. If a remedy can be found to control the excessive loss of fluid which is going on in diabetes, and to improve the general condition of the system, we may hope, with a careful diet and regimen, to prolong life for many years in comfort, if not to cure the disease itself. The case of the late Dr. Camplin is a very remarkable one of what may be done with care and judicious management. The specific gravity of his urine, which at one time was as high as 1040, fell to 1016, and without a trace of sugar; but the improvement was more from diet than from any medicine. The good that has been achieved in the present case must be due to the medicine employed rather than to the diet, which has not been carefully observed. The patient has throughout eaten moderately of ordinary bread, and violated the rules laid down by drinking porter frequently. In other respects his diet has consisted chiefly of eggs, fish, and meat.

J. H——, aged 57, by occupation a messenger, experienced good health till April, 1868, when he became very weak and languid, lost flesh, and had no appetite. He was told by a medical man that his kidneys were sound, although at this period he passed an excessive quantity of urine. For many years he was addicted to drinking a great deal of beer, but lately he was reformed. In November, 1868, when I saw him for the first time, he was too feeble to walk across the room, and was very worn and emaciated; indeed he could not support himself in an upright posture. He was afraid to eat, from the extreme flatulence and inability to digest food. The action of the heart was very feeble. The liver much exceeded its natural limits, and there was considerable fluid in the peritoneal cavity. The superficial veins of the abdomen were enlarged. The legs were very anasarcous, shining, and pitting on pressure, and there were dark ecchymosed spots which threatened to burst. I prescribed the nitro-muriatic acid with taraxacum and gentian, and ordered him to drink a little brandy-and-water. Two days later the specific gravity of his urine was found to be as high as 1045, and to assume the deepest brown color on boiling with liquor potassæ. During the day and night he passed between ten and twelve pints of very faint straw-colored urine. As the acid mixture seemed to suit, I told him to continue it, and ordered in addition two drops creosote in the form of a pill three times a day. He also took dilute phosphoric acid with glycerine in barley-water for an occasional drink, although his thirst was less than I have ever observed before in a case of diabetes. There was another unusual feature in this case: the bowels were almost always moved regularly every day without aid from medicine.

On the 24th of December, as he was not making any satisfactory progress, I determined to give him the ethereal solution of peroxide of hydrogen in half-drachm doses three times a day, in an ounce of water, omitting all other medicine. Three days later the dose was increased to one drachm. A remarkable change for the better at once set in: the urine was reduced in quantity, and the appetite and strength improved.

Urine passed in twenty-four hours:—

1868 ...	Nov. 12th ...	11 pints ...	Sp. gr. 1045
1869 ...	Jan. 26th ...	7½ „ ...	„ 1030
„ ...	Feb. 1st ...	6½ „ ...	„ 1032
„ ...	„ 24th ...	5 „ ...	„ 1024

March 3rd.—He has increased fifteen pounds in weight, and looks altogether another person. His liver is greatly reduced in size, and the abdominal veins are much less prominently marked. No fluid can be detected in the cavity of the abdomen, and the amount of tympanitis is only slight. There is scarcely a trace of œdema in the legs. Dr. Savage, who requested me to look after this patient, concurs with me in attributing the improvement to the employment of the peroxide of hydrogen.

Manchester-square, March, 1869.

ON THE PHILOSOPHY OF COUNTER-IRRITATION AS APPLIED IN PRACTICE.

By John G. French, F.R.C.S.,
Surgeon to St. James's Infirmary.

I do not think that there is anything more easily explained in the remedial art than the *modus operandi* of counter-irritation, although I agree with Dr. Anstie that the principle of action is misunderstood, and that therefore erroneous ideas and practice are entailed upon it.

It is upon the comprehension of the principle alone to which I desire to direct attention, for I must premise that, as a remedy of great efficacy its claim is as well established by experience as any other. As a general illustration of the subject, it may be said that a disease of deep seat and long standing fails to show the least improvement under what are deemed the most favorable circumstances, as of rest, proper diet, comfortable temperature, pure air, agreeable occupation of mind,—even, apparently, of good general health.

If, under these circumstances, an injury is inflicted upon the skin, as by a burn (actual cautery), or by caustic potass, we can yet absolutely rely upon the separation of the destroyed skin from the living, and afterwards upon the healing process being carried on until cicatrisation is complete, I think the explanation is this—namely, that however *reparation* may fail in the original disease, it may still be expected with certainty in the recent injury: and that whatever force and action are comprised in that term will be carried on until that reparation if complete, which, in the case I have put, will be for a considerable time. During this time the original morbid action is observed first to diminish, as rendered evident by the diminution of inflammatory products and pain, and by the gradual restoration of structures morbidly altered to a natural condition.

Perhaps the more appropriate term by which all this can be expressed, and which is sought for by Dr. Anstie, is "diversion," instead of "counter-irritation;" at least it has the advantage of being the shorter term. But to alter names is so inconvenient, that I think it far more important to acquire distinct perception of the truth, value, and meaning of terms before altering them.

Now I believe that all the measures which are comprised in the term counter-irritation consist in the infliction of an injury; and the beneficial result, when obtained, is effected by the corresponding *diversion caused by the reparative process of that injury*, whatever it may be. So that the point to study is what is the reparative process peculiar to each remedial injury; and then to suit the remedy to the malady.

In the term "remedial injury" everything used as counter-irritant must be included, not omitting the mildest rubefacient.

When success attends the remedy, which I selected as an illustration, I assume that those forces,—namely of reparation—which are employed with energy upon the recent injury, act by direct diversion from those forces which maintained the old disease: that bloodvessels there so long distended had become too feeble to contract and regain tone; but now obtain repose and consequent vigor, by the diversion thus made in their favor, and that thus the cure is effected.

If the use of counter-irritation prove unsuccessful, it would argue to a certain extent the want of judgment with which it was prescribed—an argument applicable to remedies generally, for it is certain that if remedies of any description whatever gain general credit, they become unduly prescribed, of which fact, as an illustration, none is more remarkable than venesection, which had become so universally used that laboring men adopted it as a means of preserving health; to use their own language, "always being bled spring and fall," with that object. Now, however, it has been generally abandoned, and would hardly be prescribed by anybody who could not from it confidently expect a very immediate, remarkable, and lasting benefit. It is no doubt just as good a remedy as ever, but is now only prescribed with more care and discrimination.

Great Marlborough-street, March, 1869.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare. —MORGAGNI *De Sed. et Caus. Morb.* lib., iv. Prœmium.

ST. GEORGE'S HOSPITAL.

CASE OF ACUTE GLANDERS.

(Under the care of Dr. DICKINSON.)

The question of the mode of propagation of glanders from beast to man — whether by inoculation or by infection — has been a good deal discussed, and very contrary opinions have been expressed. In the case which follows, and which occurred quite recently, there can be little doubt that it was by inoculation through the wound upon the hand that the patient became affected with this most fatal, perhaps, of all disorders. For the notes of the case we are indebted to Dr. Reginald Thompson.

Richard O——, aged thirty-six, admitted February 24th. He was a hunting groom, and had the care of three horses, which were reported sound; but he had lately been in the habit of visiting the stables of a veterinary surgeon. He had a scratch on his thumb on admission, but the date of the wound was not ascertained. Three weeks before admission he was seized with shivering and symptoms of fever, but he had no running at the nose. This was followed by a boil above the wound on the thumb, and another over the left eyebrow. In a week the glands of the face and neck became inflamed, and he was restless and delirious at night.

On admission, he was in a state of great prostration, and very tremulous. The hue of the face was yellowish. The glands of the head and neck were much enlarged, inflamed, and tender. The breath was very fetid, but no discharge from the nose was detected. The fauces were red, but not ulcerated. The tongue was much enlarged, indented with tooth marks, and was with difficulty put out beyond the teeth; it was thickly furred. The pulse was rapid and running, and very feeble. He had a short, frequent cough. Noisy râles were heard all over the lungs. The sputa were viscid and purulent. There was much dyspnœa, and some dysphagia; and the voice was harsh and stridulous. No other glands besides those of the head and neck were enlarged, and there was no particular eruption about the body. The urine was full of albumen. The fetor of breath was much diminished by the free use of Condy's fluid, and stimulants were given. But on the evening of the 25th his voice became less distinct; the dyspnœa and dysphagia increased; and he died from apnœa at 2 A.M. on the 26th.

The body was examined by Mr. Pick. There was a scar on the left thumb over the metacarpo-phalangeal joint, and a cicatrix as if from an ulcer on the thumb in the course of the absorbents. There was great swelling and œdema of both sides of the neck, but especially the left side: and in both parotid regions on the face. The lower two thirds of the right lung was quite solid, and in a state of gray hepatisation. The disease was more advanced in front than behind, and the lung-tissue was completely broken down and infiltrated with puriform fluid. Under the microscope, it presented nothing but pus-corpuscles, and the débris of broken-down material. The left lung was congested. Studded throughout the lungs were numerous patches of peculiar appearance; they were of a slate color, gradually shaded off into the healthy lung, and of about the size of hazel nuts. The lung-tissue did not appear altered except in color. Examined microscopically, these patches presented no alteration in appearance from healthy lung. The heart was semi-contracted. There were decolorised clots in all the cavities; but with these exceptions, the blood throughout the body was fluid. The muscular structure was soft and rotten. The cervical glands were found to be in a state of suppuration, forming circumscribed abscesses full of creamy pus. There was great swelling and œdema of the larynx above the true vocal cords, especially of the epiglottis, the mucous membrane of which was full of fluid, and transparent. The mucous membrane of the trachea was injected, and much redder than natural. The liver was large and fatty; the spleen diffluent; the kidneys were large, coarse, and congested. There was suppuration in the left parotid, not in the right. The axillary glands were natural.

ROYAL FREE HOSPITAL.

OBSTINATE CASES OF ACUTE AND CHRONIC GONORRHŒA. SUCCESSFULLY TREATED BY INJECTIONS OF GLYCERINE OF TANNIN.

(Under the care of Mr. J. D. Hill.)

Perhaps no surgical disease is so frequently observed in hospital (out-patient) practice as gonorrhœa, and the treatment which is advocated by surgical authorities cannot in many instances be surpassed; occasionally, however, troublesome cases will arise, both in the acute and chronic form of the disorder.

In these cases, previous to the employment of any kind of local or constitutional treatment, whether alone or in combination, several circumstances, Mr. Hill thinks, have to be considered.

First, it is necessary to determine the occupation, habits, and constitutional peculiarities of the patient; or, in other words, what assistance, both from within and without, can be brought to bear upon a purely local affection. Secondly, to overcome local difficulties, which are both physiological and mechanical in character; and these may be briefly said to consist in the mobility of the affected part, its dependent position, and the occasional contact of an irritating fluid — the urine.

The treatment which Mr. Hill tells us he has extensively employed in hospital and private practice was, he believes, first introduced by Dr. Ringer, of University College, who has kindly favored him with the following remarks: — "For some time past I have been making observations with an injection of glycerine of tannin in chronic gonorrhœa and gleets, and have found it of great use, especially in gleets, which I believe may be removed more quickly with this injection than perhaps any other. In the acute stage of the disease a little care is necessary, or great pain is caused. This may be prevented by diluting the glycerine of tannin with equal parts of mucilage. Another point to attend to is that the injection should not be injected too far, or it causes a great and frequent desire to make water."

Mr. Hill is therefore enabled to support the experience of Dr. Ringer, not only by recent cases, but also by observations on the treatment of gonorrhœa by tannin and mucilage injections extending over some years. These injections he first used in the proportion of ten grains to the ounce, but latterly, as suggested by Dr. Ringer, he found the glycerine of tannin more serviceable, slightly modified, however, as to the diluting agent.

The precaution alluded to as to injecting is probably a most important one, whatever be the lotion employed; for although in some few instances the fluid may be injected too far, in the larger number it will not be injected far enough. Now in either case the surgeon is blamed for a fault which in reality rests with the patient; and here it may not be out of place to describe the method which Mr. Hill recommends to all patients using injections:—

"The bladder having been first emptied, the bottle containing the lotion is to be well shaken, and about two drachms of it briskly poured into a saucer. This must be quickly drawn into a glass syringe with a bore in the nozzle equal to a No. 6 catheter. The penis is then to be held in the left hand, with the thumb and little finger respectively placed upon the superior and inferior portions of that organ close to the symphysis pubis, and the fore and middle fingers resting in like manner upon the superior and inferior surfaces of the glans close to the meatus urinarius. The syringe, with the piston withdrawn, is now to be taken up with the right hand, and the nozzle as far as its shoulder carefully passed into the urethra. Previous to injecting, the thumb and little finger of the left hand must compress the root of the penis, in order that the urethra be closed against the passage of any fluid beyond this point. When a sense of tension is felt, the syringe may be withdrawn; but the front fingers must previously be so applied as to compress the glans, and thus prevent any escape of fluid from the meatus. Next, with the thumb and forefinger of the right hand the fluid in the urethra is to be set in motion, and so kept for four or five minutes. This will be attended with a gurgling noise from the mixture of air and fluid. Thus, when the injection has so insinuated itself within the folds and lacunæ of the urethra as to saturate the openings of the follicles and mucous glands, and permeate the whole of the affected structure, it is allowed to escape."

It is conceived that by these means the bladder is protected on the one hand, and on the other there is a certainty of the fluid being applied to the affected surface of the urethra.

Mr. Hill has furnished us with the notes of six cases in which the glycerine of tannin would appear to have been of great service. In several, injections of zinc, lead, and alum had been employed without much benefit. The formula employed was the following:—Glycerine of tannin, three ounces; olive oil and mucilage, of each one ounce.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

A CASE OF SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.

(Under the care of Dr. Ramskill.)

We have watched with much interest the remarkable improvement under treatment of a man, aged forty, who came under Dr. Ramskill's care in January, 1868. He was a pot-man, sallow-faced, and unhealthy-looking, and he walked into the room with a feeble and staggering gait. There was external strabismus of the left eye, ptosis of the left lid, and occasional twitching of the facial muscles of the same side. These were the points first noticeable, and this was in a few words the history which Dr. Buzzard gathered of him:—During the past eight months he has had four fits. The first in bed early in the morning: he lost his senses; was much convulsed; bit his tongue; the attack lasting for from fifteen to twenty minutes. The next two fits, of the same character, occurred one week after the first. The fourth took place a week after Christmas. Four months ago, he says, his left eye gradually turned outwards, and he saw double. Fourteen days ago he complained of great pain at top of head, and could not sleep for three nights. His left eye closed. His wife says he became very stupid, lost his memory, and has been getting gradually worse, so that now he is almost imbecile, requiring even to be dressed. He is deaf with the left ear, and, so far as can be gathered, the sight of the left eye is defective; its pupil is dilated and sluggish. He can whistle, and can close both eyes equally well, but there is ptosis of the left eyelid. His appetite is bad, and he is long in eating his food, which is retained for some time in his mouth ere he swallows it. The left arm is wasted to the elbow, and painful.

For a month or two after his first visit to the hospital it was not possible to obtain reliable information from him as regards syphilitic infection, which was strongly suspected. His mind was so vacuous that he only gave contradictory answers. However, he was at once treated upon this view. Ten grains of iodide of potassium were given three times a day for a fortnight; then fifteen grains for another fortnight, and a blister applied to the back of his neck. On March 3rd his wife reported that he wandered a good deal every day, fancying himself a boy again. On this day one drachm of the solution of bichloride of mercury was given in infusion of rhubarb twice a day, and the iodide discontinued. This treatment was continued until June 23rd.

About the beginning of April he began to improve a good deal, especially in the condition of his mind; and it was then gathered from him that he had buboes at twenty-three years of age. He denied ever having had a chancre. He had suffered much from "rheumatics" in the arms and legs; worst at night. In June he had two fits for the first time since December. On June 23rd a return was made to iodide of potassium, which was given in ten-grain doses three times a day; and this has been regularly taken ever since. In August it is noted that he has lost all wandering; but is suffering pain in the head. In October, "There is now no strabismus, nor ptosis."

When we last saw him, a few days ago, he walked into the room with tolerable firmness, and with a bright, rather animated, expression of countenance. There was no sign of paralysis to be noted, and his mental condition was surprisingly changed from what it was when he came under treatment.

The case is an interesting one, both as showing the value of specific treatment and as a lesson in the fact, often unrecognized, that unusually great patience is necessary in the treatment of syphilitic diseases of the nervous system, improvement being often much delayed. The man has been attending the hospital regularly for fourteen months, and with constantly increasing advantage.

GREAT NORTHERN HOSPITAL.

THE USE OF CARBOLIC ACID.

Carbolic acid in the form of lotion has been used at the Great Northern Hospital in many cases, with, on the whole, very satisfactory results. Although it has not appeared in all instances to have prevented free suppuration, yet in many this has been unquestionably the result. What has, perhaps, been most observable after the use of the application in all kinds of wounds and abscesses, has been the general absence of pyæmia &c. We derive our information from Mr. Phil. D. Hopgood, house-surgeon, who has been good enough to furnish some particulars.

In a case of hernia under the care of Mr. Gay, the patient suffering from heart disease, the sac sloughed, with discharge of quantities of pus, although the carbolic lotion (1 part in 40) was employed. In another case, in which Mr. Gay excised the knee-joint, secondary hæmorrhage came on, and filled the cavity with a large clot of blood. The lotion (1 in 40) was used, warm, to syringe out the coagulated blood, and repeated twice daily for a week. The agent seemed to have the effect of preventing suppurative action, and the patient did not suffer from constitutional disturbance, as might reasonably have been expected. Mr. Gay has likewise employed the acid of this strength to syringe into the knee-joint after being opened for disease. In most cases suppuration was checked to a great extent.

Mr. Adams has not used the carbolic paste, being more in favor of the Richardson's styptic colloid; but is fond of the carbolic-acid lotion (strength, 1 part in 40.) In the case of a boy who met with an injury, received by falling from a height upon a hook, being suspended by it, the hook penetrating the elbow-joint, and, causing a large lacerated wound, eight sutures were used, and the colloid applied; but suppuration and destruction of the joint ensued, necessitating excision of the joint. Subsequently the carbolic-acid lotion (1 part in 40) was used to dress the wound. In this case suppuration did not appear to be materially lessened; but the acid acted as a perfect disinfectant, and certainly granulations were favored by its application. There was little constitutional disturbance. Ultimately the case did well. Mr. Adams likewise employs a useful application in the form of a poultice. In a case of phlegmonous erysipelas of the arm, with deep suppuration extending up to the axilla, deep and long incisions were made by Mr. Adams, and wool soaked in hot carbolic lotion (1 part in 40) was applied in the form of a poultice, being covered by gutta-percha tissue. Suppuration in this case was materially lessened, the wounds always looking healthy, and the case soon recovered, without constitutional disturbance. Mr. Adams uses the lotion for ordinary dressings in suppurating wounds, and considers this mode of application in the form of lotion (1 part in 40) preferable to any stronger application.

Mr. Jackson has employed the carbolic oil (1 part in 5) in a case of ovariotomy, having soaked in the oil the ligatures which were used to secure the pedicle. The lotion (1 part in 40) was used for sponges, and the wound having been closed, a pad of lint soaked in carbolic oil was employed as a pad externally. The patient died, peritonitis having been the cause of death; but in another case Mr. Jackson would be tempted to use it in a similar manner. He has likewise employed the carbolic oil (1 part in 5) in cases of burns). One very extensive burn (one-fifth of the body being burnt) was caused by the explosion of gunpowder. After having been dressed in the ordinary way with oil and lime-water, on the fourth day (suppuration having been established, and being very offensive) the carbolic oil was employed; and immediately it acted as a perfect disinfectant. Little pain was experienced from the dressing, which was renewed twice daily; but in a few days its application caused great pain, and a much weaker solution (1 part in 20) was used. Suppuration in this case was to a great extent checked, and granulation certainly favored, the oil acting as a complete disinfectant. Mr Jackson has used the lotion (1 part to 40) in a very large suppuration in bursa patellæ. In this case no suppuration followed its application, the wound healing up in a week or two.

The carbolic-acid paste has been used on two or three occasions to small operations, but without success. In one case of amputation of two fingers the paste was used, the effect being to cause the flaps to slough, and to vesicate the skin on the parts touched by the acid.

On the whole, the use of carbolic acid in the form of lotion, 1 part in 40, has been attended with beneficial results, this strength being considered most useful, and answering every purpose for which this acid has gained favor. The strong acid applied according to Lister's method appeared to act, Mr. Norton says, as a direct caustic, causing destruction of tissue.

GUY'S HOSPITAL.

EXCISION OF OLECRANON ULNÆ.

(Under the care of Mr. John Birkett)

In the case of disease of the elbow-joint described below, the olecranon process of the ulna only was excised. The case serves to illustrate the advantage of opening this joint freely, in order to allow a ready escape for pus; and it shows besides that, although the articular cartilage of the entire joint may be in a morbid condition, it is not requisite to cut off other parts of the bones forming it. In other words, this comparitively trifling operation suffices for the cure of the disease, and the preservation of a highly useful limb. It may be regarded as one stage in the treatment of these cases which, if not successful, can be supplemented by the excision of the other articular surfaces, and, if failure of cure then happens, by amputation of the member. The youth of the patient favored the repair of the disease, and the benefit he derived from the residence at Margate had a material influence on its cure.

A carman, aged nineteen, was admitted into Lazarus ward Jan. 10th, 1868. About six months previously he was struck on the elbow by a cart-wheel. He did not feel much pain at the time, but went on with his work as usual. A few days afterwards he experienced "gnawing pains" in his elbow, and in two or three weeks the joint began to swell. He went on using his arm for two months; by that time the swelling, which had extended upwards and below the joint, had caused so much stiffness, and the pain was so great, that he could no longer use his arm. The pain was not continuous, but was always worse at night, generally waking him "with a start" as he was going to sleep. He then came as an out-patient at the hospital, where the arm was fixed at right angles on a splint, and the joint blistered several times, with apparent relief.

On admission, there was considerable enlargement of the right elbow-joint, of a doughy feel; but there was no fluctuation. The skin was red only at the inner side, where there was increased heat; the fingers were benumbed. His appetite was good, tongue clean; bowels rather costive. Ordered citrate of iron and quinine, five grains, in camphor water, three times a day.

Jan. 16th.—A blister to be applied to the elbow, which is painful. There is pointing over the inner condyle.

18th.—In the night the abscess burst and discharged much pus. He sleeps fairly now.

20th.—Experienced much pain in the night. Joint discharges freely.

27th.—Continues about the same. Has an attack of acute eczema on hand and thigh.

Feb 6th.—Eczema well. Sleeps pretty well now. Joint still discharges freely.

18th.—Operation. A veritical incision, five inches long, was made over the olecranon, the joint opened freely, and the olecranon process sawn off. The end of the humerus and upper end of the radius and ulna were covered with healthy granulations. Wet lint was wrapped round. Acupressure was used on one or two vessels.

20th.—Pins taken out, and wound dressed with permanganate. Appetite bad; good deal of pain.

22nd.—Wound discharges freely; pain less; sleeps better; appetite improving; the wound has healed at ends.

24th.—Inside splint put on. Ordered six ounces of wine.

May 8th—Patient left hospital to go to the Royal Sea-bathing Infirmary at Margate, the joint being stiff and still swollen, but not painful. All sinuses healed up.

The man remained at Margate for five months, and returned home with the joint quite well. He showed himself at the hospital about the latter end of December; there was then slight movement of the elbow, which was perfectly strong and very useful.

LONDON HOSPITAL.

PAIN IN THE LEG OF NINE YEARS' DURATION RELIEVED BY TREPHINING.

(Under the care of Mr. Maunder.)

A female, aged twenty-nine, struck the lower part of the right leg nine years ago. She has not been free from pain since the accident for more than a month or two at a time. Rest and counter-irritants have been repeatedly used in vain, and she is prepared to submit to any treatment that offers a chance of relief from suffering. Her nights are greatly disturbed. To the extent of about two inches, and as much above the ankle, the tibia appears to be thickened throughout; the skin over it in front is of a somewhat dusky red, and pressure causes pain.

On Jan. 27th the soft parts were incised. The periosteum was found thickened, and an extent of tibia which could be covered by a shilling was carious and softened. A trephine was applied, and the bone around the diseased spot proved to be very hard and dense. No pus was found. The patient has progressed favorably, all her distressing symptoms have subsided, and on Feb. 26th the wound was nearly closed.

A CASE IN WHICH MEDULLARY CANCER OF THE LUNG SIMULATED PLEURITIC EFFUSION.

(Under the care of Dr. SUTTON.)

We chanced to witness the autopsy of this patient, and the case strikes us as one of so much importance (especially now that paracentesis thoracis is being more practised) that we are very pleased to be able to give a short account of the circumstances. For this our readers are greatly indebted to the disinterestedness of Dr. Sutton, who has not allowed personal regret at a mistaken diagnosis to interfere with the publication of that which may serve as a useful caution to others. It need scarcely be said that the result of the case was not in the least influenced by the error.

A female child, aged eleven years, was brought to Dr. Sutton, at the Victoria Hospital, in the latter end of January, livid, and suffering great dyspnœ. On examination, there appeared to be pleuritic effusion of the left side. She was admitted into the London Hospital on Feb. 8th. The physical signs were as follows:—There was absolute dulness throughout the left side, back and front. In front the respiration was inaudible, except under the clavicle There was bronchial breathing close to the spine on the left side, and here tactile vocal fremitus which was elsewhere absent, could be perceived. The heart was displaced, and was felt beating a little to the right of the *right* nipple. The left side was bulged and apparently enlarged; the epigastrium sank in during inspiration. The temperature was normal; the pulse varied (about 116); respiration from 32 to 36. The diagnosis was "very great effusion into the left pleural cavity." The girl was tapped twice by Mr. Stephen Mackenzie, assistant medical officer, the points chosen being between the eighth and ninth ribs in front and behind angles. A little dark blood issued on each occasion, and the second time something like pus. The dyspnœ increased, and the child died on the 26th March.

Before making the autopsy, Dr. Sutton found, on measurement, that just below the nipple the chest measured one inch more on the left than on the right side. A trocar was passed in between the fifth and sixth ribs, and some brain-like substance escaped through the canula. Examination revealed a large deposit of medullary cancer occupying the entire left chest, and this had pushed the heart considerably to the right. The left lung was collapsed, pushed backwards, and spread out over this cancerous mass. Only a limited examination was permitted, so that it could not be ascertained whether there was elsewhere any deposit of cancer.

FARRINGDON GENERAL DISPENSARY.

CHRONIC LARYNGITIS IN A WOMAN AGED FIFTY-TWO: GREAT DYSPNŒA; TRACHEOTOMY; DEATH FROM ASTHENA SIX WEEKS AFTER OPERATION.

(Under the care of Dr. C. R. DRYSDALE and Mr. C. J. SMITH.)

Tracheotomy greatly prolonged life in the following case; and it is of course a question whether, had it been performed earlier, a cure might not have resulted. The subject is one to which attention was directed at the Clinical Society, in consequence of a paper read, if we remember rightly, by Mr. Bryant, in which very early interference was strongly advocated.

Mrs. H——, aged fifty-two, became a patient in the first week of October, 1868. On being first seen by Dr. C. Drysdale, she was found to be exceedingly hoarse, not being able to speak above a whisper. By her own account, this affection of the larynx had come on suddenly after a violent cold, while she was living badly and was very ill-lodged. On inspection, the epiglottis was plainly seen, very much enlarged and œdematous. The laryngoscope showed the same appearance at the back of the epiglottis, but, owing to a large quantity of glairy mucus being present, it was impossible to get a view of the true vocal cords or the interior of the larynx. The throat was painted outside with iodine paint, and the interior of the larynx swabbed with a strong solution of nitrate of silver. Subsequently, the epiglottis was twice scarified, and a solution of tannic acid and other astringents were used without effect; the patient taking at the same time cod-liver oil, and occasionally a solution of iodide of potassium, which latter medicine, however, she had great difficulty in swallowing, and took but rarely in consequence. Frequent fits of threatened suffocation took place during the months of October and November, and the patient urgently demanded that something should be done for her relief. Under these circumstances it was determined to give her the chance of recovery which might be afforded by tracheotomy.

On Dec. 15th, Mr. Smith performed tracheotomy at the patient's home; either spray being applied along the proposed line of incision, which was carried from the cricoid to the sternum. The edges of the sterno-hyoid were held aside by tractors, and the dissection being continued, a large vein was found running down the median line, and opening into the left innominate, which was unusually high. This was held out of the way, and the trachea being exposed, three of its rings were divided. There was not the rush of air and spasmodic coughing to which one is accustomed upon opening the trachea. The patient declared herself greatly relieved, and the dyspnœa, which had been very severe, vanished as if by magic. Except a little oozing, there was absolutely no bleeding; so without delay an ordinary double tube was introduced, and the patient put to bed. She took a little wine and water after the operation, though previously she had been quite unable to swallow it. Seen in the evening at half-past seven, she was found in comparative ease, breathing perfectly well.

For about a month she went on apparently improving and gradually gaining strength, but with continued severe soreness of throat, which quite prevented her taking medicine or wine, or indeed anything but the blandest fluids and simplest articles of diet, beef-tea given in jelly even causing her great distress. Still she managed to take large quantities of milk, eggs, sponge cakes, oysters, &c.; and on January 14th and 15th she contrived to swallow a pint of wine without much pain.

Jan. 20th.—She appeared weaker, her appetite failing; and from this time she rapidly sank, and died on the 28th.

Dr. Drysdale made a post-mortem examination of the throat, and his notes are appended:—

Autopsy, thirty-six hours after death.—Body extremely emaciated; rigor mortis well marked. Owing to the patient's relatives being Irish Catholics, there was some difficulty in examining the body, and hence only the trachea and larynx were examined. The epiglottis was found to be extensively ulcerated, nearly one half of its dimensions being eaten away. There was much thickening of the parts around the arytenoid cartilages, the false vocal cords were ulcerated, and the space between the true and false cords was full of purulent matter, the tissues adjoining being all much thickened and inflamed. The appearances were those of simple inflamation of the larynx, and there was no implication of the gullett or neighboring organs.

MIDDLESEX HOSPITAL.

CASE OF LIPOMA NASI.

(Under the care of Mr. Hulke.)

Nowadays we do not often see the large, overgrown, knobby, purple noses which were formerly not uncommon. We owe this, perhaps, to our less intemperate habits. The cuticle in lipoma nasi is thin, and the cutis vera, with the underlying cellular tissue and the sebaceous follicles, is hypertrophied. When the lipoma has reached such dimensions as to greatly disfigure the personal appearance, the only applicable treatment consists in shaving down the overgrowth with the knife. The bleeding, although free, is usually soon checked, and the wound cicatrises quickly and well.

To Mr. Norton, house-surgeon, we are indebted for the particulars relating to this case.

A coachman, aged forty-nine, was admitted into Peppy's ward on May 5th, 1868, with an enlargement and redness at the tip and sides of his nose, with dilatation of the orifices ot the sebaceous follicles, which disfigured him so much that no one would engage him.

The lipoma was shaved down by repeated slices till the fibro-cartilage could be seen. The bleeding was soon arrested by pressure and ice, and the wound was dressed with unguentum simplex.

The patient left the hospital on the 1st of June, with a smooth even scar, and his personal appearance greatly improved.

MISCELLANEOUS CASES.

With this heading we propose to furnish from time to time a column which shall contain a brief reference to medical and surgical cases *under treatment at the moment* in various hospitals. Our aim will be to provide a sort of index to cases of disease, so that scientific workers in various directions may learn in what quarter they can see for themselves, or gather information respecting, a patient whose malady especially interests them. Registrars, house-physicians and house-surgeons have it in their power to increase materially the utility of this column of reference with very little personal trouble; and we rely with confidence upon their help in a work intended particularly for the mutual convenience of those engaged in the study of disease as it is presented in the wards of our hospitals.

In a recent visit to St. Bartholomew's Hospital, Dr. Andrew showed us several cases of interest, which we here merely record in a very few words.

1. A woman, G. N—, aged forty-four, with great enlargement of spleen, which had existed twenty-two years. Three years ago she had a severe attack of hæmatemesis, which occurred ten months afterwards. Again, after an interval of ten months, she had a third attack, and passed also red blood by the bowels. The nature of the enlargement is somewhat obscure. It began when she was at Sheerness, and may, therefore, probably be aguish, although she has never had any other symptom of ague. On the other hand the spleen began to enlarge after her second confinement, and the child born at that time died of ulcerations of skin. Between her first and second confinement she had miscarried. There is, therefore, a possibility of syphilitic infection. She is using the biniodide of mercury ointment, about half a drachm of which is rubbed over the belly every day. It is thought that the swelling has lessened in size. This ointment is found very useful in splenic enlargement. Dr. Andrew tells us that almost every autumn he gets some cases of ague which have originated in certain streets of Blackfriars.

2. A case of general muscular asynergia, following fright from the bite of a dog. We may probably refer on a future occasion to this very interesting case, in connection with some others of similar character, under the care of Dr. Ramskill, in the London Hospital.

3. An old soldier has internal strabismus, apparently from paralysis of external rectus, which followed pain in forehead and back of neck, with giddiness and double vision. He says he never had syphilis; otherwise the case a good deal resembles many of that character. Dr. Andrew thinks it is very likely neuralgic, and is giving the man five minims of liquor arsenicalis three times a day, under which he is improving.

4. A painter, admitted with colic, was attacked with epileptic convulsions, accompanied by an extremely high rate of pulse, which persists. Pulse has been as high as 160, varying, however, a good deal, and being generally lower in the morning. We shall probably return to this case.

In University College Hospital, the following are amongst the cases under treatment:

1. *Phantom tumor.*—Sir. Wm. Jenner has a case of phantom tumor. There is globular resonant distention of the whole abdomen. The woman is hysterical and passes almost neutral

urine. A short time since Dr. Reynolds had a case of similar kind in the hospital. Having placed the woman under the influence of chloroform, and thus reduced the tumor, he had her laced up very tightly, so that, on recovering consciousness, fresh distentions could not take place. She left the hospital cured, at least temporarily.

2. *Diabetes.*—Under Sir Wm. Jenner, Dr. Reynolds and Dr. Wilson Fox, there have lately been three cases of diabetes treated by peroxide of hydrogen. One patient died, one went out unrelieved, and the third remains under treatment. The conclusion arrived at has been that the remedy was useless. No effect was produced upon the quantity of sugar or water. So long as his diet was not restricted the existing patient did not improve.

3. *Rheumatoid arthritis.*—Under Dr. Reynold's care is a very characteristic example of this obscure malady. A woman aged thirty, has great enlargement of various joints — knees, knuckles, and wrists, of two years' duration, with grating and severe pains, worst at night. No evident cause, incidental or hereditary. She is taking syrup of iodide of iron and cod-liver oil.

4. *Aneurism of descending aorta.*—A woman, aged forty-two, under the care of Dr. Reynolds. She was a patient at Christmas, 1867. There was then hoarseness of voice, which is no longer observed. She has never had contraction of the pupil. The swelling begins below left clavicle, and extends downwards, projecting much, to within an inch of the nipple. Outwards it passes to the axilla, and inwards to the strenum. She noticed the swelling a year and a half ago, but six months before had suffered from giddiness in the head and vomiting. There is a rough systolic bruit; second sound inaudible.

5. *Tapping in pleurisy.*—Dr. Fox has a man under his care with pleurisy, who was tapped by Mr. Berkeley Hill a short time since, and a pint of fluid let out. The sixth interspace, right side below axilla, was the point at which a trocar fitted with india-rubber tubing was inserted. To avoid the entrance of air, the tube was made to discharge its contents under water. The wound was closed immediately and remains healed. The man was greatly relieved.

6. *Epithelioma of the larynx.*—Under Mr. Marshall's care is a young man with epithelioma of the larynx. He is fed by the stomach pump. Inhalations of iodide of potassium, and sipping of morphia with glycerine, are amongst the palliatives which have been tried, but without any relief to his distress.

7. *Necrosis in the neighborhood of the shoulder-joint.*—Under the same surgeon's care is an interesting case of extensive disease of bone surrounding the shoulder joint, but not involving it. Bits of bone have been removed, and the man moves pretty freely a joint which at the first aspect looks seriously involved.

8. *Division of femur for bony anchylosis.*—Mr. Erichsen has cut through the femur of a young woman thus affected, in accordance with the plan recommended in America by Drs. Bauer and Sayre. The head and neck of the bone had been absorbed, and so had a great part of the acetabulum. The bone was sawn through as close to the pelvis as possible. There is a rather large longitudinal wound down the outside of upper part of thigh, but the patient seems to be doing well.

TAPPING IN PLEURISY.—In *St. Mary's Hospital*, under the care of Dr. Handfield Jones, is a Hindostanee cook, who came in on March 12th with great distress of breathing, and the heart displaced to the right side from extensive pleuritic effusion. He was tapped the same day by Mr. Noble Smith, house-surgeon, and about a pint and a half of fluid let out. Three days afterwards the dyspnœa returned, and the tapping was repeated, about two pints more being evacuated. He is very much relieved. On the first occasion, a scalpel cut having been made in the left axillary line between the fifth and sixth ribs. Sibson's flat trocar and canula was introduced, and the fluid allowed to run, no precautions being taken against the entrance of air. On the second occasion the use of a syringe was added. The fluid was almost clear, and did not show any pus. The first wound has healed, the second is healing. In the same hospital there is a girl, under Dr. Sibson's care, who has been tapped with great advantage.

ANEURISM OF THE AORTA.—In the *Middlesex Hospital*, under Dr. Sanderson's care. A man, aged thirty-four. The right radial and subclavian pulsations are imperceptible; the upper part of the sternum pulsates, especially towards the right side, and its skin shows venous engorgement. Between the second and third cartilages, just to the right of the sternum, a double soft bruit is imperfectly heard when the patient's breath is held. Pulsation in the right carotid is to be felt, but not perfectly. No tumor under the clavicle. Cardiac sounds and area of dulness normal. There is pain in the left trapezius, and down the left arm. The voice is somewhat altered. There is probably aneurism of the innominate or transverse arch of the aorta. Although the right radial gives no pulsation to the finger, a tracing is obtained by the sphygmograph (200—300 grammes pressure). It is a mere wave. The man had acute rheumatism twelve years ago; and pains in the left side, not extending to the left arm, began in 1866.

ANEURISM OF AORTA.—In the same hospital, Dr. Murchison has a coachman, aged thirty-eight, with aneurism, probably of the ascending aorta. There is a tumor to right of sternum. Right radial pulse slightly less than left. A double murmur heard over tumor. On December 21st, ten minims of tinctura veratri viridis (Ph. Br.) were given twice a day, and the dose since gradually increased, so that he is now taking twelve minims three times a day. Diuretics have also been administered, with an ample, nourishing diet, and very little fluid. The man has greatly improved. The tumor has decreased in size, and the skin over it, which was tense, shining, and red, is now of natural appearance. The veratrum only once produced a little sickness.

SOFT SYPHILITIC NODES.—A lad had just been admitted, under Dr. Murchison, whose wrist, at a casual glance, would suggest the idea of acute rheumatism. But, examined carefully, it is found that there is a puffy swelling *above*, not *in*, the joint. It is elastic and painless, and the movements of the digital tendons are not affected by it. On his sternum, in the right posterior triangle ,and on the right shin, are similar swellings, and eight months ago he had one on the head. Syphilis acknowledged nine months ago, followed in three or four weeks by great headache, and appearance of the node. He has had spots, and some, but not severe, sore-throat.

Jaundice from Hydatids.—A man, aged thirty-four, was shown to us by Dr. Murchison, who had been admitted with two tumors in right hypochondrium, small, fluctuating, and distinct. From the first five ounces, and from the second seven ounces, of characteristic fluid were let out by a fine trocar. Probed with a wire, it was ascertained that the cysts were very small: yet the man is deeply jaundiced, evidently from pressure upon the bile-duct. Further examination showed a small, fluctuating tumor, projecting slightly between the eighth and ninth ribs at back of right flank, the ribs being somewhat widely separated by it. Dr. Murchison was going to tap this, when he found another swelling of doubtful character in the left groin, and he therefore waited to see the effect of cleansing the bowels ere dealing with the third cyst. The man had no bad symptoms after either tapping, but rather grumbled at having to lie on his back for twenty-four hours.

Luxation of Humerus from Epilepsy.—There is now amongst the out-patients, under Dr. Hughlings Jackson's care, at the *National Hospital for the Epileptic and Paralysed*, a man who has dislocated his right shoulder seven times; the first four times in fits, the last three times in simply using the right arm. He now wears an apparatus contrived by Mr. Gumpel, with the hope of keeping the head of the bone in its place. In the very first fit the patient ever had, two years ago, he dislocated the left shoulder, and this dislocation has never been reduced, although several attempts have been made by eminent surgeons.

St. George's Hospital.

1. *Chorea and pericarditis.*—There is an interesting case of chorea under Dr. Ogle's care. A girl, aged fourteen, was admitted on Feb. 24th with chorea of three weeks' standing, following acute rheumatism, which had, in its turn, followed scarlatina. There was a rough mitral murmur, and the heart's action was increased. Whilst under treatment in the hospital for the chorea she has been again attacked with acute rheumatism, and pericarditis now complicates her condition. With the occurrence of the rheumatism the severity of the chorea much diminished, but increased again when the pericardium became affected. She is taking brandy, opium, and belladonna.

2. *Cruveilhier's disease.*—Under the same physician's care is a man, aged fifty-two, whose deltoids and shoulder muscles generally on each side are acutely atrophied, so that he can only move his arms by swinging them like pendulums, and cannot raise either to the top of his head. If his account is to be depended upon, the affection has taken a very rapid course; for he says he has only lost flesh since Christmas. The backs of his hands are covered with psoriasis, which has existed for two months.

National Hospital for the Paralysed and Epileptic.

1. *Glosso-laryngeal paralysis.*—Another phase of progressive muscular atrophy may be studied here, in the case of a woman, aged fifty-eight, under Dr. Ramskill's care, who is affected besides with glosso-laryngeal paralysis. When first seen (May, 1868), this latter affection was almost alone perceptible; but since then there has been gradual wasting of the limbs, and notably of the hands, so that these now present, in an unusually well-marked form, the *main-engriffe* character. Any one who wishes to study a model case of glosso-laryngeal paralysis (as described by Trousseau in his "Clinique Médicale"), cannot do better than see this woman.

2. *Progressive locomotor ataxy.*—In the same ward is a woman, aged thirty-seven, under Dr. Buzzard's care, with well-marked locomotor ataxy, whose condition affords points of interesting contrast and comparison with the last case. For example, each patient finds difficulty in getting a drink of anything, but from different causes. Dr. Ramskill's patient cannot lift a cup to her lips, so wasted are her muscles. The other, however, if she can only get her fingers to bear upon the cup, can lift it rapidly. The difficulty in her case is to lay hold of it, and direct it to her lips. The disease has existed for seven years, and she does not get materially worse—indeed latterly, whilst in the hospital, she has improved a good deal. She is taking nitrate of silver and belladonna. The symptoms in the preceding case have all come on in less than a year and a half, and they tend rapidly to destroy the patient.

3. *Chorea.*—In the same hospital is a young woman suffering from chorea, in whose case Dr. Hughlings Jackson has been trying the effect of large doses of the succus conii. Beginning with one drachm, the dose has been increased to two and then to three drachms three times a day, but without any effect upon the spasmodic movements. She is now taking half-grain doses of morphia with some benefit.

Charing-cross Hospital.

Dr. Dowse, resident medical officer, showed us some cases in this hospital, to which we may briefly refer.

1. *Abdominal tumor, probably malignant.*—There is a woman, aged thirty-eight, with a hard lump in the epigastric region, measuring about three to four inches transversely, and one inch vertically. Previously healthy, she began to suffer very violent pain across the stomach and in the left shoulder sixteen months ago, increased immediately by taking food. At the same time vomiting commenced, and has since continued. She is now much emaciated, but until six months ago she did not observe much loss of flesh. She has only observed the tumor about two months. She vomits dark-brown fluid.

2. *Hæmaturia.*—Under Dr. Salter's care is a woman, aged twenty-seven, with a presystolic murmur at the heart's apex, due to mitral constriction. Her health was very fair till one year ago, when she suffered from "bad beating of the heart." Two months since her feet and body generally began to swell, and at the same time she commenced passing "smoky" urine, an this has since continued. Latterly, however, under the influence of ten grains of gallic acid, with opium and bark, three times a day, the urine has become pale-colored, and the smoky tinge has almost completely disappeared. It has

all along contained albumen, but not more than would correspond to the blood, and no casts. There is probably here congestion and rupture of the Malpighian capillaries; and the case appears to be one of those which we sometimes see, of hæmaturia without independent albuminuria, probably from special tendency of the capillaries to give way.

3. *Ruptured urethra, followed by symptoms of ureter or kidney mischief.*—There is a young man in the hospital, who was transferred to Dr. Salter by Mr. Canton, and whose case appears of somewhat obscure character. It seems that in August last he ruptured his urethra by striking the perineum against a bit of iron, and suffered from retention of urine, followed by extravasation, suppuration, and sloughing, perineal abscesses, pointing about the scrotum and nates, through the sinuses left by which urine exuded. After the passage of a catheter, which was for some time impracticable, urine flowed through the urethra. He got pretty well, and left the hospital. Two months ago, however, the urine ceased altogether to pass naturally, and found its way through the sinuses, and he was readmitted. He suffered then, and still continues to experience, very acute pain in the right flank, and on one occasion found blood running from the penis. His pain recurs nearly every night, and is accompanied by rigors. No tumor is to be perceived, but there is tenderness on pressure at the seat of pain. The symptoms seem to point to dilation of the ureter and possibly of the pelvis of the right kidney.

CLINICAL RECORDS.

AMPUTATION OF THIGH FOR DISEASE OF THE KNEE-JOINT, WITH EXTENSIVE SUPPURATION AMONG THE ADJACENT MUSCLES.

We saw Mr. Callender amputate the thigh of a girl five years old on 27th February at *St. Bartholomew's Hospital*, under circumstances of peculiarly unfavorable and distressing character. The poor child was cachectic to the last degree, and the operation was performed with the hope of giving her a last chance. It seemed that three years and a half ago she had fever, followed by strumous abscesses. When admitted into St. Bartholomew's two years ago she had disease of the right ankle-joint, and whilst under treatment for this the left knee-joint became inflamed and suppurated. On and off she had been treated for two years, and every effort had been made to improve her nutrition; but she had latterly become much worse, and would evidently sink. Two antero-posterior skin flaps were made, and followed by a circular sweep through the muscles to the bone, which was then sawn through. This mode of operating is, we think, the favorite one just now in the hospitals, and its results will compare favorably with those of any other method. The flaps were united by wire sutures, the whole exposed surface having been first thoroughly swabbed over with a solution of carbolic acid in water, one part in twenty. Pads of lint soaked in the same solution were applied to the stump, and held by strapping and bandage. Of course, the hopes of a successful result are of the faintest character.

HAIR-BLEACHING FROM NEURALGIA.

The influence of neuralgia in decolorising the hair is well shown in the case of a patient lately under Dr. Murray's care in the *Great Northern Hospital*. This woman, who was admitted on account of a fibrous tumor of the uterus, was remarkable in having the internal half of one eyebrow and the corresponding portion of eyelashes perfectly white, she being a brunette. It seems that three or four years ago, having gone to bed well, she was attacked during the night with a very severe spasmodic tic, which lasted only a few minutes; and in the morning the hair was permanently bleached. She is in the habit of blackening it with burnt cork.

PARALYSIS OF SIXTH AND SEVENTH NERVES FOLLOWING A BLOW ON THE HEAD.

Dr. Leared showed us, a few days since, a boy aged thirteen, in the *Great Northern Hospital*, whose case is worth noting. Four months ago he got a blow on the left parietal bone, was stunned for a few minutes, recovered, and felt nothing wrong for two months and a half. Then he woke one morning (Jan. 20th) with severe occipital pain and shivering, which lasted two or three days, and was accompanied by some vomiting and insomnia. Since then he has kept his bed with headache, the pain recurring at 11 P.M., and lasting till 4. Three days after the beginning of the headache there was facial palsy of the right side, and this was noted at the time of his admission into hospital on Feb. 8th. He had then also (it is noted by Mr. Hopgood, house-surgeon) external strabismus of the right eye, and complained of pins-and-needles and want of power in the left arm. When we saw him, the right facial nerve was paralysed, and there was some slight *internal* strabismus, depending, it was evident, upon some paralysis of the sixth nerve. No other cranial nerves were involved. There is an uncertain account of delirium before admission into hospital. The boy's general health appears fair, but the symptoms noted are evidently of grave character, and suspiciously like those of abscess of the brain.

CASE OF CYSTIC TUMOR OF THE MAXILLA.

A girl, aged eighteen, was admitted into the *Middlesex Hospital*, under the care of Mr. Hulke, on Oct. 20th, 1868, with a tumor of the face of three years' duration. Mr. Norton, house surgeon, gives us a description of it. It was attached by a broad base to the outer surface of the maxilla above the alveolar process, and it distended the cheek. On firm pressure, a peculiar recoil was perceptible, giving the impression of a bony cyst; and the escape of a few drops of viscid fluid through an exploratory puncture with a grooved needle confirmed this opinion. The alveolar process, the palate, and the nasal wall of the antrum were not distended. A free opening was made by cutting away part of the thin outer bony wall, which exposed a cavity lined by a smooth membrane projecting into the antrum, as well as outwardly. It held about six drachms of viscid mucus. No solid contents were found. Suppuration followed. The cavity was daily syringed with a solution of permanganate of potash, and it slowly contracted, the disfigurement being completely relieved.

Provincial Hospital Reports.

KENT AND CANTERBURY HOSPITAL.

CHOREA TREATED WITH SUCCUS CONII.

(Under the care of Dr. Welch.)

In a recent number of the *Practitioner* Dr. John Harley brought forward a few cases of chorea treated successfully with large doses of succus conii. Mr. T. F. Raven sends us, from the above hospital, notes of a severe case of that disease which has lately been under treatment, and in which the recovery of the patient would seem to be attributable to the employment of the succus conii.

F. K——, aged seventeen, a thin, pallid youth, was admitted into the hospital on Dec. 4th, 1868, suffering from chorea of a severe character. The involuntary movements were constant, universal, and very violent. He could not speak more than one word at once, and could not protrude the tongue. There was a very faint basic systolic bruit.

The patient had been ill with chorea in slight and variable degree for six months. The disease had assumed its acute form for three weeks. No rheumatic history could be traced.

In the position of a large boil, over the angle of the right scapula, the constant tossings of the patient had produced a bedsore, which extended rapidly in depth and circumference; and it was feared that the angle of the scapula would soon protrude if the disease was not checked. Chloroform was administered with temporary benefit only. Morphia only made matters worse. Failing to satisfy himself as to the value of the standard remedies in chorea, the bromide of potassium having also been tried and found wanting, Dr. Welch ordered the patient, on Dec. 16th, to take one drachm of the succus conii every six hours. The case had now become so serious that a fatal termination was feared. The one-drachm dose seemed to have little effect, and was doubled in two days' time, when some benefit appeared to result. On the 18th December a dose of three drachms was given, after which the patient complained of transient giddiness and slight impairment of vision. The same dose was repeated at intervals of six hours, with the most marked and rapid benefit. In two days the patient was comparatively well, and the sore over the scapula soon presented a good healing edge. The subsequent progress of the case was satisfactory.

That the treatment of chorea is one of the most doubtful points in therapeutics is shown by the variety of remedies employed, as preparations of zinc, arsenic, steel, &c. Each of these is confidently recommended by its supporters as possessing a specific power over the disease, which is not so apparent to those who have not staked their faith upon it, and who are more independent in their judgment. That arsenic, zinc, and steel may be of advantage, in so far as they are tonics, no one may wish to deny; but it requires a very intimate knowledge of disease to assign the exact proportion in which, in hospitals, the regimen and hygienic conditions are instrumental in restoring to health a patient who, suffering from chorea, is taking one or other of these remedies. Besides, in this gradual subsidence of chorea its natural history plays its part, and the termination of the malady may be the natural one. But the progress of the above case towards recovery was so rapid, and the improvement was so marked immediately after the large doses of the medicine employed, that its issue may be fairly attributed, Mr. Raven thinks, to the succus conii.

Medical Societies.

MAY—JUNE.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Mr. Solly, F.R.S., President, in the Chair.

CASE OF SEVERE WOUND OF THE KNEE-JOINT, TREATED SUCCESSFULLY, AND WITHOUT SUPPURATION, BY EARLY, EXTENSIVE, AND REPEATED COUNTER-IRRITATION OF THE THIGH AND LEG: AN ILLUSTRATION OF A NEW MODE OF TREATING INFLAMMATION.

By Furneaux Jordan, F.R.C.S.

Surgeon to the Queen's Hospital, Birmingham.

A young man was admitted into the Queen's Hospital, with an incised gaping wound at the front of the right knee-joint, two inches and a half in length. The wound was closed with silver stitches, the joint compressed with cotton-wool and bandages, and a splint applied. Inflammatory symptoms occurred on the second day, and blistering over the femoral and anterior tibial arteries was immediately resorted to, and counter-irritation was kept up by the use of iodine. After counter-irritation was established, not a single unfavorable symptom occurred. Mr. Jordan observed that inflammation is everywhere the same, but the remedies are numberless. We ought to use the best remedies in all inflammations. The best remedies are those which suspend the conditions which permit inflammation to exist. Those conditions he considered to be, briefly, these:—Extended space,—no part can inflame if restrained within its physiological space; increased quantity of blood,—no part can inflame with the blood of health. Other and less essential conditions are that there should be no other prosperous inflammation; that there should be unrest; and that there should be a cause. These conditions should be removed in every inflammation by pressure on the inflamed part, counter-irritation over the next vascular territory, rest, elevated position, and—where practicable—removal of the cause. It is in our power to make any given inflammation be the less prosperous of two inflammations. We may do much to prevent probable and expected inflammations by counter-irritation. We might prevent cardiac inflammation in acute rheumatism, peritonitis in wounds and operations opening the abdomen, suppurative synovitis in wounds of joints, &c.

Mr. Charles Moore wished to ask why the counter-irritation was applied over the artery.

Mr. Carr Jackson said that he had treated a few cases of orchitis in the manner recommended by Mr. Furneaux Jordan, by painting the scrotum with a strong solution of nitrate of silver (two drachms to an ounce), and with very good results.

Mr. Bramwell observed that the paper contrined much which required careful consideration, but that the sermon was, he thought, carried beyond the limits of the text. A single successful case, treated by blistering, was very interesting; but should we therefore lay aside all other remedies? Mr. Bramwell referred to three cases of wound of the knee-joint that had done well under his observation, and remarked upon the differences between individuals with regard to their powers of repair. The history of Mr. Jordan's patient showed him to be a man not of irritable disposition or inflammatory habit.

Dr. Anstie inquired why the two essentially different remedies, a blister and the actual cautery, should be called by one name. The amount of disturbance produced was very different in the two cases. Assuming that the action of the actual cautery was analagous to that of a blister, he still objected to the word "counter-irritation," as hiding a false idea, as being a barbarism in language and mischievous to thought. With regard to the situation of the blisters, Mr. Jordan appeared to select a contiguous independent vascular tract, under the belief that some influence upon the calibre of the vessels was exerted directly through the sympathetic; but it was more probable that the vaso-motor nerves were influenced by a reflex action through the sensory filaments.

Mr. Savory said that the scope of the paper was far too wide for the debate of a single evening; but he wished to raise one or two questions. he doubted that incised wounds of the knee-joint were so hazardous as the author supposed, and referred to the operation for the removal of false cartilage. He thought that of all the remedies used against inflammation pressure was the most hazardous and the most mischievous, and urged that pressure made by the surgeon must always be incomplete—always less complete, for example, than the pressure produced in a case of inflamed bone.

Mr. Birkett said that wounds of the knee-joint were very rare, but less dangerous, according to his experience, than in that of the author. He referred to three cases, two of incised wound and one of contused wound, in which recovery took place.

Mr. Solly's experience of forty years enabled him to confirm Mr. Birkett's statement with regard to the curability of such cases. He (Mr. Solly) attached great importance to the administration of an efficient purgative soon after the injury, so as to remove all irritating secretions from the bowels.

Mr. Bruce related a case of very severe injury to the knee-joint, that he saw when visiting the Belfast Hospital. The patient fell upon the edge of a curb-stone, and cut the joint open transversely, through the middle of the patella. In clearing out coagula from the joint, the fingers of the surgeon came in contact with the crucial ligaments. The wound was dressed with carbolic acid, and pressure was applied to the femoral artery. A good cure was the result.

Mr. Thomas Smith thanked the author for his paper, but differed very much from his opinions. He related a case in which Mr. Paget had removed the entire patella, and which did well. He inquired how Mr. Jordan applied his method to common inflammatory diseases—e. g., to boils and carbuncles. Mr. Weeden Cooke mentioned a case in which a blister to the back of the thigh appeared to arrest inflammation of the head of the tibia.

Mr. Furneaux Jordan replied at great length. He said that he usually blistered in stripes, and that he applied these stripes along the course of main arteries in order to obtain sheltered positions, and also because he thus hoped to influence both the vascular and the nervous trunks. He attached no importance to the term counter-irritation, and would gladly accept a better one from Dr. Anstie. His idea was to excite another inflammation; and perhaps "distant irritation" might convey this idea. He regarded contused wounds of the knee-joint as being far less dangerous than simple incised wounds. The bruising and laceration of the soft parts around acted as a counter-irritant to preserve the joint from destructive inflammation. He believed there was no inflammation in which moderate pressure was not useful,—pressure that stopped short of producing pain. In treating common inflammation, such as a boil or carbuncle, he would surround it with a broad belt of artificial irritation, at some little distance; and in erysipelas of one thigh he would blister the other. He was not accustomed to open the knee-joint for the removal of false cartilages; but employed a subcutaneous incision. If he wished to open the knee-joint, he would prefer making a bruised wound to an incised one.

Mr. Solly referred to Mr. Jordan's treatment of carbuncle, in order to express his own unshaken belief in the value of incisions.

DESCRIPTION OF A DISLOCATION OF THE HEAD OF THE FEMUR, COMPLICATED WITH ITS FRACTURE: WITH REMARKS.

By John Birkett, F.R.C.S.,

Surgeon to Guy's Hospital.

The injury occurred to a female, thirty-five years old, and was produced by a fall from a height. The indications of displacement of the head of the femur on to the dorsum ilii were apparent. The woman was killed by injuries inflicted on the brain; and, after death, the head of the left femur was found resting on the dorsum ilii, a little above the acetabulum. A piece of the head of the bone was broken off, and lay in the acetabulum, retained there by the ligamentum teres, which was very slightly torn. The author alluded to the rarity of the injury, the mechanism of its production, and its clinical importance.

Mr. Solly said that he had at one time doubted the possibility of fracture of the head of the femur together with dislocation, but that he had recently heard of a case. He pointed out that the complication might be suspected when the dislocation could be reduced but not retained in position.

Mr. Birkett made some observations upon the probable direction of the force by which the injury had been caused.

A CASE ILLUSTRATING THE PHYSIOLOGY AND PATHOLOGY OF THE CERVICAL PORTION OF THE SYMPATHETIC NERVE.

By WILLIAM OGLE, M. D.,

Assistant Physician to, and Lecturer on Physiology at. St. George's Hospital.

J. R—— found in the commencement of 1866 that a hard lump had formed on the right side of his neck. This enlarged rapidly, and the arm became very much swollen, apparently from pressure upon the brachial vessels. The swelling of the arm soon subsided; but the lump in the neck grew bigger, and at length suppurated, forming a large abscess, which took many months to heal. While it was still open—about the close of 1866, —the man's wife noticed that his right eye was smaller than the left, and the right ear redder than its fellow. On looking in a glass he found it was as she had told him. He soon also noticed that his right ear and cheek felt hotter to him than the corresponding parts on the left, and that this was specially the case when he had washed his face in cold water. Neither in mind nor body was he discomforted by these symptoms, and never thought of speaking about them to a doctor. They were noticed accidentally when he was being treated for slight rheumatism at the latter end of 1868.

The following were the symptoms found by the author at that period. There was a puckered scar across the root of the neck, on the right side, extending from the median line behind to the clavicle in front. There was no pulse in the radial or brachial artery, though the arm was well nourished and fairly muscular. The superficial veins of the arm and right side of the thorax were swollen and tortuous. The lesion which had thus permanently obstructed the large brachial vessels had not interfered with the carotid. The right palpebral fissure was narrowed to about half its proper width, the upper lid having somewhat fallen, and the lower lid being somewhat raised. The upper lid could be raised perfectly when the man so chose, so that the ptosis was not due to palsy of the levator palpebræ muscle. The notions of the eyeball were quite normal. The right pupil was much smaller than the other. It dilated fully with atropine, and when this was applied to both eyes they dilated to an equal size. With Calabar bean the right pupil was reduced to a pin's point; the left not to quite so small a size. The right eyeball was somewhat retracted. The cornea was considerably flattened. The conjunctiva was rather more congested than that of the left eye, but in no great degree. There was no hyperæmia of the right retina, nor could any difference be detected with the opthalmoscope in the condition of the two eyes. The sight was equally good on either side. The right ear was redder than the left, and sometimes the increased redness extended to the back part of the cheek, and to the skin above the eye. The right temporal artery was larger than the other. The right ear was hotter than the left one, and the difference could be even felt distinctly with the hand, as well as measured by the thermometer. The right nostril, also, and the right side of the mouth, were hotter than the corresponding parts on the left. This at least was the case when the man was at rest and in health. When he took violent exercise the thermometric conditions of the two sides were inverted; the left side became the hotter, and the right the colder. At the same time, the left side of the face, head, and neck sweated profusely, while the right remained perfectly dry. According to the patient's account, there was a similar contrast on the two sides of the face in the other secretions. The right eye never watered as did the left, when exposed to a cold wind. The right nostril never discharged mucus, and the right side of the mouth felt drier than the left. There was abundant cerumen in both ears. Febrile excitement seemed to act in the same direction as exercise, and to equalize the temperature on the two sides. There were no nutritive alterations in the hyperæmic parts; no hyperæsthesia; no muscular paralysis; no alteration of form in mouth or nostril. The pulse was always rapid. There was a slight husky cough; but the voice and respiration seemed quite normal.

The author explains these symptoms by supposing that the abscess had eaten through the cervical sympathetic. Such a lesion and no other would account for the phenomena. The chief symptoms are compared in the paper with those observed in the only other case on record of sections of the cervical sympathetic in man, and also with the results of such section in animals. It is shown from the experiments of Schiff, and from similar ones made by the author, that the strange symptom of inversion of the thermometric conditions of the two sides from violent exercise, or other febrile excitement, was not exceptional. The physiological explanations of this and the other chief symptoms are considered.

Mr. Solly said that it was impossible to exaggerate the value of the paper. He wished, however, to ask one or two questions. The author had referred to the sympathetic almost as if it were a nerve arising from the brain, and again spoke of its origin in the spinal cord. He (Mr. Solly) did not recognise such an origin, but only a connexion with the cord; and would like to know what part of the sympathetic system had been injured—whether a ganglion, or commissural fibres, or branches. The case threw much light upon the office of the sympathetic.

Mr. C. Brooke inquired whether any examination of the optical condition of the eye had been made, and if so, whether there was hypermetropia.

Mr. Savory said that in this great paper one point of chief interest had been very lightly passed over—namely, the effect of the increased vascularity on nutrition. Vascular changes were always proportionate to active changes, but were he believed, the effect of the latter and not their cause. In this case we had a prolonged determination of blood to a part; and, if this was not attended by any increased nutrition, we had a strong proof that hyperæmia does not of itself produce active changes; or, in other words, that demand produces supply, not supply demand.

Dr. Pavy said the phenomena exhibited by Dr. Ogle's patient precisely resembled those that he had produced in animals by division of the sympathetic. Referring to the observations made by Mr. Savory, he said that, in one of his rabbits, the tip of the congested ear had mortified.

Dr. R. J. Lee described the differences in the structure of the iris in different classes of animals —erectile tissue predominating in some, muscular tissue in others,—and thought that further experiments were needed to determine whether the movements of the pupil were similarly controlled in all, and whether the influence of the sympathetic was on muscle or bloodvessel.

Mr. Carter mentioned a case in which a railway injury to the upper part of the spine was followed by irregular expansion of the pupil under atropine, a portion of the dilatation being paralysed.

Mr. Power referred to the meagre and uncertain character of our knowledge about the sympathetic.

Mr. C. Moore sought to explain the dryness of the skin on the injured side by the suggestion that the dilated bloodvessels did not need the relief afforded by perspiration.

Dr. Ogle thanked the Society for the manner in which his paper had been received. In reply to Mr. Solly, he could not tell what part of the sympathetic had been injured. He tried to obtain evidence on the point, but could find only one small symptom. When the upper cervical ganglion of an animal has been torn out, he has noticed a peculiar little husky cough; and such a cough was a noticeable feature in his patient's case. Mr. Solly objected to the sympathetic being said to have its origin in the cord, but in this he (Dr. Ogle) used only the ordinary language. Mr. Brooke had inquired about the refraction of the eyes. No special observations had been made upon the point, but the sight of both was very good. He agreed with what had fallen from Mr. Savory; and had never seen such a lesion of nutrition as that described by Dr. Pavy. With reference to Dr. R. J. Lee's question, whether the sympathetic influence on the pupil was produced through muscle or bloodvessel, he referred to a case of ligature of the carotid, recently recorded by Dr. J. W. Ogle. In this instance, when the carotid was tied, the pupil remained unchanged. He could not accept Mr. Moore's explanation, because, when the man was heated, the vessels on the sound side also dilated.

CLINICAL SOCIETY OF LONDON.

Dr. Greenhow in the Chair.

Mr. Holthouse related two cases of Traumatic Tetanus in which the Calabar-bean extract was given in larger doses than had hitherto been considered compatible with safety, viz., three grains every two hours, and on one occasion as much as four grains and a half in a single dose. The first case, in which the large doses were given, recovered. The second, which was of a more acute character, died on the fourth day of the seizure, notwithstanding the physostigma had been given from the very first accession of the symptoms in grip doses every hour, and the patient was for the greater part of the time fully under its influence. Mr. Holthouse remarked that with our present knowledge of the pathology of tetanus, a successful issue could scarcely be looked for in those cases in which the peripheral nerves were deeply implicated, unless they could be acted on simultaneously with the cord. The Calabar bean diminished the excitability of the latter, and of the motor nerves, but did not effect the sensory nerves; we wanted a remedy which would act similarly on these, and possibly opium, from its known paralysing effect on the nerves, might do this. The chief points of interest in the fatal case, in which the knee-joint was laid open by a large lacerated wound were the almost entire absence of constitutional symptoms till the accession of the tetanus, and the absolute immunity from painful cramps, which constitute so striking a feature of the disese.

Mr. Bryant referred to a case in which he thought the fatal result due to the influence of the Calabar bean. He thought very ill of treatment in acute tetanus, but drew attention to the possible utility of tracheotomy as preventive of the risk of death from spasm of the glottis.

Mr. Maunder in two cases failed to gain anything from the use of the Calabar bean. He had found more benefit from opium. Tetanus did not, he considered, especially attack the larynx, and he doubted if much good would come from tracheotomy, although it was an operation he thought deserving of a trial.

In reply, Mr. Holthouse observed that in tetanus patients either died by suffocation during a paroxysm, or they died of exhaustion. If this suffocation was from spasm of the glottis, then opening the trachea would undoubtedly prevent death from that cause; but it was equally probable that death during the paroxysm arose from spasm of the diaphragm, and possibly of all the respiratory muscles. The symptoms which Mr. Bryant had detailed as occurring in his case were those which always precede death from exhaustion. Mr. Holthouse did not believe that the Calabar bean had anything to do with death.

Mr. Callender referred to cases of tetanus treated by Mr. Wormald by active aperients, and to the good results which were thus obtained in many instances.

Dr. Day read an account of a remarkable Enlargement of the Right Leg associated with a discharge of Chylous fluid.

The case will be reported, with the discussion, after the report of a committee appointed to examine it has been brought before the Society.

Dr. Throwgood related a fatal case of Obstruction of the Right Ureter, an inch from its vesical orifice, which gave rise to dilatation of the ureter itself and of the right kidney, the latter organ being enormously distended with purulent fluid. About a year before his death the patient, a previously healthy man of thirty-nine, had two attacks of hæmaturia at intervals of a few weeks, neither of which was attended with symptoms of importance. After these he remained well for ten months, at the end of which time the hæmaturia returned, and became constant, the urine being albuminous, and containing an abundant corpuscular sediment, among which blood-discs could be distinguished. Renal abscess was suspected, but no tumor could be detected.

After some further details had been communicated by Mr. Bryant, who had seen the patient in consultation,

Mr. Callender drew attention to the importance of well-timed surgical interference in similar cases, in illustration of which Dr. Langdon Down relating a case of Spontaneous Cure of Renal Abscess by Pointing.

Dr. Day communicated a case of enlargement of the right lower limb, with distension of the subcutaneous lymphatics of the penis and scrotum, and occasional discharge of chylous fluid, in a child aged seven years. The enlargement was first observed when the patient was two years and a half old, and was considered to be due rather to infiltration of the subcutaneous cellular tissue than to hypertrophy. In 1866 the case was seen by Mr. Paget, who pronounced that the condition of the limb was not œdema, but overgrowth, and believed that it was due to obstruction of the femoral vein, there being at that time no indication of disease of the lymphatics. Towards the end of the same year the prèpuce became enlarged and indurated, and in 1868 a vesicle, not surrounded with redness, appeared at the edge of the frænum; other similar vesicles subsequently presenting themselves on the scrotum and on various parts of the affected limb, soon after the vesicle first formed began to discharge. Since this period the discharge has recurred at intervals in increasing quantity, the patient's health being generally good, with the exception that each discharge is preceded by oppression and followed by more or less exhaustion.

The case had been referred at the last meeting to a committee, who reported that they had directed their attention in the first place to the nature of the enlargement of the right lower limb. From comparative measurement they had concluded that the bones and muscles participated no less than the skin and cellular tissue in the overgrowth. They were further of opinion, from the examination of the patient that the hypertrophy was intimately connected with the distended state of the lymphatics. In confirmation of this view, they referred to four previously recorded cases in which lymphorrhagia with dilated lymphatics was associated with hypertrophy of the affected part, as well as to the researches of Virchow as to true hypertrophy of the tongue, which show that in that disease the muscular overgrowth is also of lymphatic origin.

A discussion followed, in which Dr. Cholmeley and Mr. Barwell expressed the opinion that the enlargement of the limb was due to excessive arterial supply, and that accordingly the proper treatment would be to apply continuous pressure to the femoral artery. Dr. Broadbent, on the other hand, agreed with Dr. Day in believing that the overgrowth was to be attributed to the detention in the affected parts of lymph, which, in common with most physiologists, he regarded, not as an excretion, but as a nutritive liquid.

The President, after expressing his general concurrence with Dr. Broadbent, briefly related a case in which it was clear that hypertrophy of the muscles of a limb had resulted from obstruction of a vein receiving its tributaries from them. He referred in illustration to the fact in comparative anatomy that those muscles which required to contract strongly for short periods—e. g., the muscles of flight in birds—are always richly supplied with veins, the plexiform arrangement of which seems adapted to secure the sufficient detension of blood in the muscular tissue. It was the consideration of this fact that had led him, when first asked to see the case at a period when there was no indication of disease of the lymphatics, to infer that the hypertrophy might be due to venous obstruction. He thought that although there was no doubt that the disease had its origin in the condition of the lymphatics, yet there was much obscurity both as to the nature of the change they had undergone, and as to the reason why the liquid was chylous.

Mr. Barwell reported a case of Pyæmia with pneumothorax, seen by himself and Sir Thomas Watson. A gentleman, thirty-five years of age, after pain in the axilla, suffered from a small abscess in the armpit. A sudden change in his temper and manners caused fear of mental derangement. Pneumothorax succeeded. Besides the original abscess pus collected in the knee and elsewhere. Coma supervened, and he died after fifty-five days. The pyæmia here arose from a slight cause. The sudden change of the patient's tone and manner is not an isolated or unusual coincidence. Mr. Barwell had seen it in many cases, so that after an injury, or surgical operation, a change in the patient's manner to sullen moroseness and mental depression was, in his belief, the first sign of pyæmia; at least, its occurrence was of great import.

After the narration of a case of Typhoid Fever by Dr. Julius Pollock,

Dr. Langdon Down related his case illustrative of the beneficial employment of "Pancreatine" in the treatment of fatty alvine evacuations.

After some observations by Drs. Baümler, Broadbent, and Church,

Mr. Gascoyen related a fatal case, in which, as in Dr. Down's patient, diarrhœa adiposa was complicated with diabetes. On dissection, it was found that there was complete atrophy of the pancreas.

After a few remarks by the President relating to cases previously recorded, the Society adjourned.

Editorial.

THE ETHICS OF PROGNOSIS.

The primary object of a patient in going to a physician is the cure or the mitigation of his disease; the saving, or, if this may not be, the extension of his life. It is a secondary duty of the physician to give, and a secondary object of the patient to receive, general instructions about other bearings of his symptoms.

We wish to say a few words about this secondary duty of the physician, in the discharge of which, it seems to us, there is room for a very conscientious physician to feel embarrassed, and for a heartless physician to do more harm than all his advice will do good. This ethical point is one which arises daily in practice. There are great differences amongst medical men in this matter of prognosis. Some physicians are sanguine and hopeful even in regard to cases they know must sooner or later succumb; others are grave and gloomy on the slightest indication of bad symptoms or degenerative appearances; and both have a certain success out of their opposite habits of prognosis. The one cheers and pleases patients by his hopefulness; the other impresses them with his prescience, and if all his prognostications are not realised, it is often set down to the skill with which foreseen evil has been averted. The difference between the physician who takes the gloomy side of a case and the one who takes the bright side for the foundation of his prognosis is often one of temperament. Sometimes—not often let us hope—it is a designed and studied one.

We wish to say a word in advocacy of favorable prognosis, as far as this can be given consistently with the facts. Of course there are cases to which our remarks cannot be applicable—cases in which plain and almost abrupt expression of truth, however unpalatable, is the clear duty of the physician. In advocating a favorable prognosis, we would urge two considerations. First, as we have said, the principle duty of the physician is, to do his patient good, to give him comfort, and to prolong his life. To magnify the bad features of his case, and so give a gloomy prognostication, is to do the patient palpable harm, probably even to shorten his life. On the other hand, to put "the best construction" on even bad symptoms is to give the patient an additional chance of life, and certainly an additional chance of extending life.

This best construcion of bad symptoms is justified by considering that we are sometimes wrong in regard to the gravity of symptoms, that even degenerative changes are often very slow, and that organic diseases are more amenable to treatment than they used to be. It is surprising when we think of the number of men that are figuring most conspicuously and creditably in the world, or have so figured, after showing symptoms of the gravest disease. A very prominent member of the present Cabinet was, ten or twelve years ago, so prostrated as to be incapable of writing a note. One of the ablest members of the late House of Commons had, years ago an attack of paralysis. And most medical practitioners could point to men filling highly important posts, over a great series of years, in commercial life, whom few insurance offices would consider good lives. In fact, most such men are not absolutely healthy, and many of them might be positively spoiled for their work by a melancholy view of symptoms which they occasionally present.

Perhaps the disease which most aptly illustrates the difficulties of the ethics of prognosis, and the difference between one practitioner and another, is the case of phthisis. Given the occurrence of hæmoptysis and a few physical indications of phthisical disease, the practitioner is apt to be excessively serious. The symptoms are disagreeable, and the chances are against his patient. He is tempted to be gloomy, and to give directions about life and duty which the future may falsify, or which are calculated to seriously depress the patient. A very eminent living physician has recorded a case that should operate as a warning against a too decidedly gloomy prognosis. A gentleman came in from the country to consult him and another distinguished practitioner of the metropolitan city in which they lived. He was laboring under advanced phthisis. "The patient was a perfect picture of consumption. He had a rapid pulse, hectic sweating, purulent expectoration, and all the usual physical signs of tubercular deposit and of a cavity under the right clavicle."

The physician in question, a deservedly great authority on diseases of the chest, thinking the case hopeless and that nothing could be done, advised the gentleman to get home soon. The patient accepted the verdict. He was a sportsman, and the particular sport to which he was addicted was that of duck-shooting. As he had only a short time to live, he thought he might as well enjoy himself in shooting ducks. In pursuit of this sport, he used to stand up to the hips in the Shannon for four or five hours of a winters' day, following the birds. In the matter of food he was equally lawless. He took whatever was going. His favorite drink was punch, and he rarely went to bed with less than seven tumblers of punch. In eighteen months he presented himself to Dr. Stokes—the physician to whom we are indebted for the above intensely important history—recovered from phthisis and quite well. Since this case was recorded, we have become more familiar with the idea of curing or arresting phthisis. Dr. Williams's valuable communications on the subject in our columns of last year make the question of prognosis in phthisis more important than ever, and make gloominess of prognosis positively wrong.

It would be a good bit of medical work if someone would collect a history of cases presenting grave symptoms, either extending over a number of years during which useful and good work has been done by the patient, or in which the symptoms after presenting themselves have been followed by recovery. Cases of vertigo, of epileptic attacks of insanity, of hæmorrhage, of hemiplegia, of diabetes, of albuminuria, of cancer, or of phthisis might be reported with a view to this question of prognosis, so as to be at once interesting and instructive. We are just now in a diagnostic humor. New methods of diagnosis are making it easy for us to diagnose disease very accurately. The danger is that we become too physical in our view of disease; that we content ourselves with detecting it, with associating it with some degeneration of structure and acquiescing in it as something inevitable. When physicians had less help from physical means of research, they were more dependent on close observation of physiological and clinical facts. It is gravely to be doubted whether, with all our improved methods and skill in physical diagnosis, we are exercising those faculties which made Hippocrates, Sydenham, and Cullen great physicians, and which make their writings books for all times. How little we know of the history of cases other than those which happen to die in hospitals.

On this question of prognosis some physicians seem to be of opinion that it is their duty to tell their patients all they know and all they think about their diseases. We entirely demur to this view of the physician's duty. It is right in the physician to be guided in giving truth to his patient by one or two considerations. First, he should consider how far his patient is capable of understanding the exact value of pathological truth. He will soon perceive that the patient is quite unable to go far in this direction, and therefore should not be troubled with too much information that is only likely to mislead him. Secondly, he should consider how far the cure of his patient will be hindered by the communication of opinions as to the most probable termination of his case. We have already excepted cases in which the tendency to death is obvious and certain. In these it is alike unkind and immoral to be otherwise than candid. In all cases it is proper for patients and physicians to consider the possibility of a bad termination of diseases; and the great duties of men, social or religious, do not depend merely upon the probable duration of life. On every ground we maintain that, in the interest of the patient, and in accordance with the growing resources of medical art, prognosis should be as cheerful and favorable as possible, and that unduly or prematurely hopeless prognosis is a violation of the first duty of the physician.

◆

THE TEMPERATURE OF ARTERIAL AND VENOUS BLOOD.

Few points of experimental physiology would appear to be more easy to determine than the relative temperature of the blood in the right and left sides of the heart; nevertheless, it is one respecting which there is great discrepancy of opinion; and we find M. Lombard, in a recent paper contained in Dr. Brown-Séquard's "Archives of Physiology," adding another to the various views on this point that have from time to time been propounded. *Primâ facie* it might reasonably be concluded that the temperature of the blood in the left ventricle is lower than that in the right, because, in traversing the capillaries of the lungs, the blood has been subjected to the cooling influence alike of evaporation of watery vapor and of contact with a large body of air. In accordance with this, we find that M. Bernard, in his experiments on sheep and dogs, observed an actual difference of one third of a degree centigrade between the two sides, and in favor of the right; and Hering, in a remarkable case of ectopia cordis in a calf, ascertained that the temperature of the right side was 1·5° higher than that of the left. Mr. Savory, on the other hand, in a short paper published some years ago, and more recently M. Colin, arrived at different results, and convinced themselves that the blood in the left ventricle is usually, if not always, warmer than in the right, and at any rate showed that M. Bernard's conclusions were neither absolute for all animals nor constant for the same species. M. Lombard very pertinently points out that the mode in which the elimination of water from the system is effected must exert considerable influence on the result; for whilst, in dogs and sheep, a large proportion of water is discharged by the lungs, in man and some other animals this function to a great extent devolves upon the skin. In a series of experiments which M. Lombard undertook, with the aid of a thermo-electric apparatus capable of registering 1-2000th of a degree centigrade, air containing various amounts of aqueous vapor and at different temperatures was breathed, and at the same time the temperature of the blood coursing through the radial artery was carefully ascertained by placing the instrument in close contact with the superjacent skin. M. Lombard argued that if, under ordinary circumstances, a certain amount of refrigeration of the blood took place during its transit through the lungs, the respiration of air raised to a temperature of 98° to 100° F., and saturated with aqueous vapor, should, by removing the causes of cooling, induce an elevation of the temperature of the blood to a corresponding extent; and although it is easily capable of proof, on physical principles, that the elevation of the temperature of the blood in the arteries would not be directly proportional to that in the left ventricle, still some evidence of an increase should be obtained. The results of careful experiment, however, showed that under these circumstances there was either no increase, or it was scarcely appreciable; or in other words, that whether we breathe hot and dry or moist and cold air, no effect is observable on the temperature of the blood. He shows moreover, by calculation, that the refrigerating influences are really extremely small in the effect they produce, the depression of temperature of the whole mass of blood by the evaporation of the quantity of water known to be discharged by the lungs not exceeding 1·13° c. in an hour; or taking into account the total quantity of blood which traverses the lungs in that period, only one-twentieth of a degree centigrade; whilst even a part of this must be deducted, since the blood permeating the tissues of the nose, mouth, fauces, and trachea, from all of which surfaces water evaporates, returns not to the left but to the right ventricle, and would therefore exert a cooling influence on the contents of that side of the heart. And again, the quantity of heat lost in three minutes (the space of time required for a complete revolution of the circulation) by the blood from contact with the air would certainly not cool the whole mass of the blood, reckoned at twenty-two pounds, more than one-fiftieth of a degree centigrade. Hence M. Lombard concludes that in animals in which the skin takes an active part in the elimination of water, the blood, in traversing the lungs, ordinarily experiences little or no refrigeration.

In commenting upon M. Lombard's observations, Dr. Brown-Séquard remarks that we are brought face to face with the following dilemma: —Either the refrigeration of the blood, when we respire dry and cold air, is so small that it is unable to exert any influence on the thermoelectric apparatus when it is placed on the radial artery, or else more heat is produced in the lungs and in arterial blood when the respired air is cold than when it is warm, in such fashion that there is in the respiration of cold air a compensatory influence to the refrigerating agency that would then be exerted. There can be no doubt, and indeed it is generally admitted by physiologists, that the absorption by and chemical union of oxygen with, the blood in the lungs should produce a certain amount of heat; and, further, it is clear that, at a low temperature, more oxygen would be thus absorbed on account of the greater density of the air, and it is possible we may thus obtain a kind of compensatory power by which the even temperature of the blood is effectually maintained.

THE DURATION OF THOUGHT.

The duration of an ordinary mental process or thought would seem at first sight to be wholly incapable of determination. We appear to have no means of judging of its commencement or end; and, even if these could be ascertained, no power of inducing its occurrence when required, or any means of comparing different kinds of thoughts. By care and attention, however, these difficulties have been in great measure overcome, and it may fairly be said that physiologists possess an approximative estimate of the duration of a simple intellectual process.

It was necessary, in the first instance, to fix upon some mental process which might be made subservient to experiment, and which, it is obvious must be of an elementary or but slightly complicated nature. Now the simplest intellectual process is, probably, the solution of a dilemma presented to one of the senses: as the sudden exhibition of a red or green light, it being previously known that one or other of those two colors was about to be presented to the eye; in regard to the sense of touch, whether the right or left temple be touched by a pin; with respect to the sense of hearing, whether the vowel *a* or *o* is pronounced The instant of the commencement of the experiment can of course be determined to a nicety by making it coincident with the establishing or breaking of an electric current which is self-registering on a revolving disc. The moment of the termination of the experiment can, on the other hand, be determined by making the subject press a button the movement of which also registers itself on the same disc, or produce a sound. Now the data thus obtained give a period of time, termed the physiological time, that is manifestly much greater than the mere intellectual process by which the difference between two colors is determined; for, in the first place, there is the period occupied in the transmission of the light to the eye; secondly, the duration of the transmission of the perception of light to the sensory ganglia at the base of the brain; thirdly the mental process itself by which the problem of the difference of colors is solved; fourthly, the formation of the voluntary impulse; and, fifthly, the conduction of that impulse to the muscles of the fingers, by which the signal of the completion of the act is given. The first of these is so brief that it may be altogether neglected; the second and fifth are probably invariable in their duration; whilst the third and fourth are found by experiment to vary within certain limits, and to be capable of improvement by practice. The rapidity of the transmission of impulses through motor nerves has already been determined by Helmholtz and others to be about one hundred feet per second; and that of a sensory impulse may be ascertained, in regard to the sense of touch, by applying the stimulus to the tip of the finger and the cheek, the difference between the times registered representing the duration of the passage of the sensory impulse through the twenty-five or thirty inches of the median or ulnar nerves. Similar experiments with different sensory nerves appear to show that sensory impressions travel with equal rapidity through the several sensory nerves, so that an appreciable difference exists between sight and, hearing in favor of the latter, because the length of the auditory is so much shorter than that of the optic nerve. From the recent investigations of Donders, it was found that the whole time occupied in visually perceiving and registering the difference between two vowels was only 0.166″, or rather more than one-sixth of a second. When, however, the subject had to determine which one out of a series of five vowels was exhibited, the physiological time occupied was 0 170″; or when the estimates were made from the minima, they were 0·124″ and 0·163″ respectively. The physiological time occupied in the perception and registration of a stimulus applied to the skin required a much shorter time, amounting to 0 066″; and that of an auditory sensation, when two previously known vocals were employed, was only 0·056″, or when five vocals were used, 0·083″—0·088″. If, instead of naming the vowel sound produced, the fact of the sound being made was alone required to be registered, the physiological time occupied was one twenty-fifth of a a second; and Donders estimates the duration of the mental process required to perceive the occurrence of a certain known sound at one twenty-eighth of a second. We would suggest to our readers that it would be interesting to determine the duration of a sensory motor impulse, which might be easily ascertained with appropriate apparatus, by estimating the time intervening between a vivid flash of the electric light or a loud sound, and the involuntary start which usually occurs. By this means, the period occupied in the production of the voluntary motor impulse in the above experiment would be eliminated, and a nearer approximation gained to the time occupied in a simple thought.

HOMŒOPATHY.

From some recent publications that have fallen in our way, and that seem intended to impose upon the credulity of the public by a semblance of medical reasoning, we infer that an attempt is being made to galvanise the corpse of homœopathy. That strange delusion, after affording for some years a rich harvest to those who professed to expound its mysteries, has long ceased to have any real existence.

It is seldom that two generations can be duped by the same trick; but still, we think, our readers should be upon their guard. And there are one or two specious pleas urged in favor of homœopathy,—pleas which incautious doctors are rather apt to admit, but which, we think, may be and ought to be refuted. Thus it is said that we have learnt from homœopathists to study the natural history of disease, and that we have also learnt from them to lay aside the excessive use of drugs.

In both these matters, we think the right view is, that the system of homœopathy was merely coincident with the tendencies of science,—a sort of abortive birth from the womb of time. Growth in knowledge comes only when the minds of inquirers are ripe for it; and the ripeness of sound minds is likely enough to be coincident with the extravagance of feeble ones. The nonsense that was talked and written by mesmerists was most blatant at the time when philosophers were laying the foundations of our present and future knowledge of the nervous system; and the nonsense talked by homœopathists was in like manner coincident with the beginning of a new era in therapeutical inquiry. In both cases the pretensions of the sham sciences overshadowed at first the claims of thereal, because the professors of the former were not troubled by any care about accuracy or about depth, and because they appealed to an audience who, with every curiosity to know what was said, had no curiosity whatever to know what was true.

We would strongly urge upon our readers, therefore, if their experience should bring them into contact with any evidences of the sham revival of homœopathy, to hold no truce with it. Its claims, its doctrines, and the practices of its professed followers, are alike eminently and distinctively opposed to truth; and truth, in regard to medicine, is at once the stepping-stone to all excellence, and the goal of all ambition.

Medical Annotations.

"Ne quid nimis."

THE PHYSIOLOGY OF CONVENT LIFE.

No sooner was the great convent case over than all the newspapers very naturally took up their parable. When so much has been said already, it is as difficult to write anything new as it is easy to express what is true in platitudes. Apart from other considerations, we, as doctors and wicked men of the world, regard the monastic and conventual form of life as founded on a misconception of human nature and human requirements. We must take up our parables from a very low standpoint. The human family possesses appetites and instincts in common with the rest of the animal kingdom of which it is part; and this being so, it is absurd to suppose that their exercise is necessarily hurtful, any more than eating and drinking are necessarily hurtful. The animal loves its kind, and will risk or sacrifice its life for its young. Just, however, as our nervous organisation is more highly developed in order to fit us for the operation of higher faculties, so are our appetites, instincts, and feelings subordinated to those faculties; but they cannot be eradicated or suppressed without some physical or moral injury. Any physician who has been accustomed to analyse the causes of disease, and trace its little beginnings, must be able to recall cases wherein eccentricity of conduct, mental or moral perversity, nervous diseases, hypochondriasis, and the like, had their origin in attempts at suppressing or concealing the natural play of human affections and instincts. The animal machine, like every other of very complex structure, depends for its healthy working on the due adjustment and relation of its several parts. A masculine quality of mind, a strong will, or the imposition of a rigid discipline will, no doubt, have the desired effect; but it is at the risk of losing that mental vigor and that active sympathy with others which are the outcome of the natural exercise of our affections and interests in the world around us. As nature intended and fitted men and women to play their parts in that world, so the resistance which follows from an interference with her plan is only to be overcome at the expense of something.

We could easily and truthfully dwell upon the evils arising from the confinement, discipline, fasting, petty drill, and other phases of a convent life; but religious ardor is not, we fear, likely to be controlled by our advice. The lack of sufficient exercise for mind and body must influence both injuriously. We do not say a word as to the object in view or the motives. Let these be of the highest and best, the facts are not the less apparent. Those who contemplate the phenomena of human life from the physiological or psychological point of view, will perceive the uniformity of the law by which things spiritual and corporeal are directed. The spiritual no less than the physical and mental qualities of our being are in conformity with it. At best, by a conventual system, you can only advance the innocency of childhood onwards to adult life, forgetful of the progressive stages in mental, moral, and spiritual development which St. Paul recognised. Without any disposition to preach or moralise, we cannot avoid perceiving the force of a religious truth—namely, that the manifestations of evil, like the appearances of good, are but very deceptive indices, after all, of the spirit within. As we cannot close a room and shut out the sunlight without risk of producing darkness, dampness, and foul vegetation, so it is with human character. We cannot impose barriers to the exercise of natural emotions and affections without developing incrustations which lessen their usefulness and mar their beauty. The room requires disinfection by the admission of air and sunshine before it is habitable; and the odor of sanctity often needs a purification in order to become a healthy sweet-smelling savor. The conventual system for young people is unnatural, and those who enter may glory that it is so; but it is clear that shutting out the world is not always synonymous with shutting out the flesh and the devil. We think this case has shown that women make bad rulers and administrators. It is not a little curious that goodness and charity should be so little cultivated for their own sakes and for their own reward. Until these are subordinated to and become the bantling of a creed, they fail to attract. Of this we need not complain, however, so that the good be done; but with all the ignorance, sickness, and destitution on every side, there is, it strikes us, ample scope for good people of every class and creed to discipline their characters to their heart's content, without the aid of dusters, door-mats, and other derogatory impositions.

THE SALE OF PATENT POISONS.

The sale of poisons must be subjected to yet more stringent limitations than those emboded in the existing Act, otherwise we shall have the crimes of Locusta or Lucrezia Borgia multiplying among us. Anyone can procure for a trifling sum at the chemist's an amount of vermin powder sufficient to poison a household. Battle's vermin killer, which is largely composed of strychnine, is in great request, and, some few weeks ago, was bought with fatal facility of a chemist in Sheffield, and employed by its purchaser (a young man named Barker) to poison his mother and sister. In their absence, he mixed it with the water in which the Sunday's dinner was being cooked. On their return, observing something peculiar in the contents of the utensil, both mother and daughter tasted them, when the latter almost immediately became sick. Suspecting something wrong, they sent the dish, not to the dining-room, but to an analytical chemist, who found in the water a considerable quantity of strychnia. Barker, on being indicted at the intermediate sessions, pleaded "Guilty," and was sentenced to five years' penal servitude. No legislation against the sale of poisons can be reckoned complete which does not prevent such facilities for committing murder as those of which the convict Barker availed himself.

ABSINTHE AND ALCOHOL.

The question whether absinthe exerts any special action other than that of alcohol in general, has been revived by some experiments by MM. Magnan and Bouchereau in France. These gentlemen placed a guinea-pig under a glass case, with a saucer full of essence of wormwood (which is one of the flavoring matters of absinthe) by his side. Another guinea-pig was similarly shut up with a saucer full of pure alcohol. A cat and a rabbit were respectively enclosed along with a saucer each full of wormwood. The three animals which inhaled the vapors of wormwood experienced, first, excitement, and then epileptiform convulsions. The guinea-pig which merely breathed the fumes of alcohol, first became lively, then simply drunk. Upon these facts it is sought to establish the conclusion that the effects of excessive absinthe drinking are seriously different from those of ordinary alcoholic intemperance.

It is not the first time that we have had to notice discussions on this subject, and to comment upon the inadequacy of the evidence produced in order to prove that absintheism, as met with in the Parisian world, is something different in its nature from chronic alcoholism. We have never denied the possibility of an ultimate discovery of such differences; but we do maintain that as yet no symptoms of absintheism have been described which are not to be met with in many of the victims of simple alcoholic excess. The sleeplessness, the tremor, the hallucinations, the paralysis, and even the epileptiform convulsions, are all of them well-known symptoms which are more or less frequently met with in the alcohol drinkers of England. And it is no sort of answer to these facts to prove, as the recent French observers have done, that the concentrated fumes of wormwood are capable of producing convulsive symptoms which are not produced by the inhalation of the fumes of alcohol. Wormwood is, after all, only present in small proportions in absinthe. And the question really before us is, not as to the effects of concentrated *inhalations* of a simple substance like wormwood, but of the comparative influence of repeated small *stomach* doses (reaching a high daily total) of an alcohol pure and simple, and of an alcohol flavored with small quantities of wormwood, and, indeed, of half a dozen other flavoring matters besides.

MEDICAL ANATOMY.

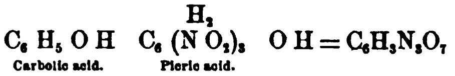
In the Preface to his "Medical Anatomy" (the concluding part of which magnificent work we shall notice on a future occasion), Dr. Sibson draws attention to a want in the teaching of our medical schools to which we have before now alluded,—the study of the relation of external form to internal structure. He says:—

"Descriptive and surgical anatomy are well taught in our medical schools, but the practical teaching of medical anatomy, or the knowledge of the relative position of the internal organs, is neglected. Indeed, on the present plan and with the existing means it is impossible to teach that subject, which is as important for the physician as surgical anatomy is for the surgeon. When a body is prepared for the dissecting-room, the arteries are injected from the arch of the aorta, to the injury of the great vessels. The superficial dissection of the body precedes that of the internal organs; and by the time those parts are reached, they have lost their freshness which is so necessary for their successful study. Generally, indeed, they are then in a state of decay and their relative position has been altered. It is impossible, therefore, that the relative anatomy of the internal organs can be taught in the dissecting-room: but the dead-house affords all the materials for their study. It falls to the teacher of pathology to make the post-mortem examinations; and it would be easy for him to give practical demonstrations of the contents of the chest and abdomen in health as well as in disease. It ought, therefore, to be one important duty of that officer to teach the topographical anatomy of the healthy viscera on the dead body. Afterwards he might take the pupils into the wards or the out-patient room, and indicate to them, on the living body, the varying position of the organs during the healthy exercise of their functions. He would at the same time train them to a knowledge of the physical signs furnished by the healthy viscera. Under his tuition, the student ought to be as familiar with the position and movements of the organs as if he saw them stripped of their parietes and exposed to view. Until this be done, it is self-evident that the teaching of clinical medicinemust be imperfect. The student naturally rivets his attention upon the subjects of his coming examination to the exclusion of everything else. He knows that his acquaintance with the anatomy of the limbs and the head and neck will be carefully tested, and that anatomy he studies. He also knows that he will not be examined on the bearings of, say, the great vessels, the heart or lungs in relation to the walls of the chest, or on the movements of those parts during life, or on the signs of their healthy functions. The result is, that the student does not seek to acquire, and has not the opportunity of acquiring, that kind of knowledge of which I have just spoken. If the examiner were to require the candidate, at his first examination, to point out accurately, on the exterior of the living body, the corresponding position and the movements of the internal organs, and the signs by which they are distinguished in health, the teacher would speedily discover the method whereby he could convey the desired information, and the pupil would eagerly avail himself of it."

It will be in the recollection of the members of the Medical Teachers' Association that Dr. Sibson exerted himself to have "medical and surgical anatomy" inserted as special subjects of study in the medical curriculum; and Sir William Jenner fully endorsed his views when, in his introductory address, he recommended that a candidate for a diploma should be required to show a knowledge of the practical methods of physical diagnosis *before* being allowed to display his theoretical knowledge on paper. We hope that Dr. Sibson takes a somewhat extreme view when he maintains that a student is never examined on the relations of unseen parts to the surface of the body. At the College of Surgeons we know that the relations of the great vessels of the limbs in the living body form part of the subject of examination; and if the College of Physicians and other examining authorities fail to make their candidates explore the anatomy of the chest and abdomen, we trust that Dr. Sibson, who is connected with some of these corporations, will not fail to invite them to better things.

PICRATE OF POTASSIUM: THE NEW EXPLOSIVE.

The recent disastrous explosion in Paris in a manufactory for the preparation of this salt, coupled with the fact that there are many other such establishments in which the accident may any day recur, gives a peculiar interest to details simply chemical in their nature. The picrate of potassium is the potassium salt of an acid to which the names trinitrophenol, trinitrocarbolic acid, picric acid, carbazotic acid, picranisic acid, chrysolepic acid, &c., have been given. The acid, a frequent product of the action of nitric acid on organic substances, was discovered by Hausmann in 1788; has been the subject of investigation by Liebig, Dumas, and Laurent; and was first accurately described by the last-named chemist, who proved it to be carbolic acid in which three atoms of hydrogen have been replaced by three atoms of the group NO_2.



$$C_6\,H_5\,O\,H \qquad \overset{H_2}{C_6\,(N\,O_2)_3}\;\;O\,H = C_6H_3N_3O_7$$

Carbolic acid. Picric acid.

This constitution at once explains the explosive character of the acid and of its salts. It will be seen that the oxygen, of which there is a large quantity, is nearly all combined with nitrogen. Now compounds of oxygen and nitrogen are very easily decomposed, especially in the presence of substances having a powerful attraction for oxygen, such as carbon and nitrogen. Gunpowder, for example, is a mixture of a substance containing oxygen united to nitrogen (saltpetre), and a substance having a strong attraction for oxygen (charcoal): while in gun-cotton, nitro-glycerine, picric acid, and the picrates, we have the two united in one compound. Stored up in all these substances is a potential energy which betrays its presence by explosion when the oxygen leaves the nitrogen to unite with the carbon and hydrogen. The picrates differ a good deal as to the rapidity and violence of this decomposition; the picrates of mercury, silver, and copper on the one hand, burning quickly, like loose gunpowder; and, on the other, the picrates of calcium, lead, and especially potassium, exploding with a loud detonation when heated on a flat plate, or when sharply struck by a hard body. The first to make practical application of this property of picrate of potassium was Mr. Whitworth, who used the salt to fill shells to be directed against the armor-plating of ships.

While picric acid may be prepared by the action of nitric acid on many organic substances, such as indigo, aloes, silk, carbolic acid, or salicin, the most convenient and economical material is the so-called "yellow gum," or resin of the *Xanthorrhea hastilis*, which yields, according to Dr. Stenhouse, about 50 per cent. of the crystallised acid. The substance is chiefly used as a yellow dye for silk and wool, and as a means of distinguishing animal from vegetable fibres, the former being colored yellow by it, the latter remaining unchanged. It is employed in the laboratory to distinguish salts of potassium from those of sodium; the picrate of potassium being very sparingly soluble in water, while the picrate of sodium dissolves readily.

PRUSSIC ACID AS A REVIVING DRINK.

The most sensational piece of therapeutics which we have encountered for a long time past is one which comes to us from France. Our attention has been called to a pamphlet by one Dr. Poznanski, containing the reprint of an address "On the Diagnosis and Treatment of Cholera," delivered before the French Academy of Medicine, and to comments on the paper by a Commission appointed to report on it. The most remarkable thing in the paper is the author's account of his treatment of the disease by prussic acid in doses of fifteen to twenty-five minims (of a 2 per cent. solution). Or if not the most remarkable fact, it is only one degree less extraordinary than the circumstance (which seems never to have engaged the author's attention) that these wonderful doses of prussic acid were given at a time when the function of absorption was altogether, or nearly, *nil*—namely, in the stage of collapse. One would suppose that by this time it was well understood that one might as well experiment upon the effects of pouring medicine down a drain as expect to get any reliable conclusions from the result of pouring it into the alimentary tube in the algide stage of cholera. The oversight is rendered the more extraordinary by the fact that Dr. Poznanski himself observed that the moment the period of reaction commenced the tolerance by the system of the medicine began to cease: in fact, the medicine on being absorbed exerted its usual effects!

There is, however, something still more astonishing than any argumentative freaks of M. Poznanski in the comments of a grave Commission of the Academy upon it, the reporter being no less a personage than M. Mialhe. M. Poznanski had appealed to the undoubted power of prussic acid to cause convulsions in young and feeble animals to prove that it is not a depressing but an exciting agent, and might, therefore, very well be considered appropriate to the treatment of a state of profound depression. One would have thought that any member of the Academy would have known better than to accept convulsions as a sign of strength, or the agent that produces them as an increaser of vital force. To our great amazement, the Commission, while cautiously declining to pronounce an opinion as to the efficacy of prussic acid in cholera—a subject on which there was then no opportunity of making experiments,—accepted at the author's valuation the arguments which he derives from the tendency of prussic acid to produce convulsions in young animals. These convulsions are, of course, accompanied by momentary excitement of the circulation, and hence the theoretical explanation by the author of the supposed good effects of prussic acid in cholera collapse which, we are surprised to observe, M. Mialhe is inclined to admit. Fortunately, the general body of the Academy was a trifle less enthusiastic, and the report was remitted to the Commission for modification.

We doubt whether in the history of medical reasoning there was ever a more flagrant instance of a chain of conclusions, each more wonderful than the other, and resting on premises altogether unconnected with them, than the argument put forward by M. Poznanski, and the report of M. Mialhe and the Commission upon the whole affair.

PRISON DIETARY SCALES.

The Thirtieth Report on Prisons in Scotland, which has just appeared, contains an official communication, furnished by the resident surgeon of the General Prison for Scotland, relative to certain dietary scales now in use in the prisons of Edinburgh and Glasgow. It appears that the Glasgow scale supplied to male prisoners contains 31·5 nitrogenous, 136·0 carbonaceous, and 5·4 mineral constituents per ounce, as compared with a diet authorised by the Secretary of State, which contains 34·6 nitrogenous, 127·0 carbonaceous, and 5·2 mineral constituents; that the latter contains 28 oz. of meat per week, but that the Glasgow scale has no meat except that included in the soups and broths. The Edinburgh scale is the same as that in use at Glasgow, with the addition of 6 oz. of bread and half an imperial pint of milk daily. It is evident that these scales are defective in meat; and experiences that have been gleaned during the past few years from the chief prisons of the United Kingdom go to prove that convicts undergoing long terms of imprisonment, unless supplied with a fair allowance of animal food, speedily become the subjects of scrofulous diseases. This fact is confirmed by the terms of the report above quoted; and we entirely subscribe to the opinions expressed by Mr. Thomson and Dr. Christison (who was deputed to assist at the inquiry), that "hard labor and the depression of mind of convicts do not admit of low dietary scales; and if there is a failure of health and strength in the early months of imprisonment, it is difficult and expensive to restore this class of prisoners to vigor for work." This subject has become of greater importance since the discontinuance of transportation for crime; for the class which now undergoes penal servitude in the prisons of the United Kingdom, in lieu of transportation, is usually composed of men whose constitutions are deteriorated by vice and privation, and whose physiques require therefore to be raised rather than lowered. We do not advocate the coddling of criminals; but on the score of economy as well as of humanity, it is wise to diminish the list of medical comforts by increasing the supply of butcher's meat.

VIVISECTION.

The subject of vivisection has again been brought on the *tapis*, owing to some remarks made by Professor Bernard, in the fourth of his present course of lectures at the Collége de France. In this, after pointing out the requirements of a properly-conducted School of Physiology, and after showing how well those requirements are fulfilled in Kühne's laboratory at Amsterdam, and Ludwig's in Liepsic, in each of which admirable arrangements are made for vivisection, physiological chemistry, and histology, he goes on to remark that, as we cannot adopt the plan of the physicians of the time of Henry II —who when that king had received his death-blow in the eye from the lance of Montmorenci, coolly performed the same experiment on four convicts who had committed capital crimes, and were thus enabled to study the effects at their leisure,—we must impress animals into our service, amongst which dogs, rabbits, and frogs, are the most available. He admits on one occasion having operated on an ape, but never repeated the experiment, the cries and gestures of the animal too closely resembling those of man. As the *Pall Mall Gazette* remarks, M. C. Bernard expatiates on this subject with a complacency which reminds us of Peter the Great, who wishing, while at Stockholm, to see the wheel in action, quietly offered one of his suite as the patient to be broken on it. Our own opinion has long been made up on the point. We consider vivisection constitutes a legitimate mode of inquiry, when it is adopted to obtain a satisfactory solution of a question that has been fairly discussed, and can be solved by no other means; but even then it should be conducted with as little pain to the animal as it is possible to inflict, and the cases are rare where chloroform cannot be employed, at least for the first incisions.

We hold that for the mere purposes of curiosity, or to exhibit to a class what may be rendered equally, if not far more, intelligible by diagrams, or may be ascertained by anatomical investigation or induction, vivisection is wholly indefensible, and is alike alien to the feelings and humanity of the Christian, the gentleman, and the physician.

THE "CAT" FOR GAROTTERS.

Amongst the earliest and most determined opponents of flogging as a means of discipline in the army and navy, we have yet always admitted its fitness as a form of punishment for certain crimes, or rather criminals, of which the garotter is the type. The violence and dastardly cowardice of this class of criminals makes the intensely physical character of the punishment of the cat at once appropriate and effective for them. They are insensitive to more refined modes of punishment, but wince under this. We are glad therefore to learn, from time to time, that our judges and magistrates are availing themselves of the power given them by a recent Act of Parliament of using the cat. Three men at Newcastle have just received eighteen lashes each, preliminary to a term of penal servitude, for a most brutal and cowardly garotte robbery, in which they alternately covered their victim's mouth with their hands and feet, and would apparently have killed him but for the approach of another person. There can be no doubt that the punishment was most richly merited. Indeed, the only doubt we have is as to whether it was not too lenient. The tails were of ordinary thick twine, not of whipcord, bound at intervals with common thread to represent knots. If this instrument is not deterrent enough for such crimes, which have been very common in the neighborhood of Newcastle, the magistrates will be justified in having a thoroughly good instrument used. We gather from the local papers that the lashes were administered on the loins. We should recommend that the buttocks be preferred, as safer, and less likely to involve serious impression on vital organs. We believe this is the universal opinion of those who have studied the effect of this punishment, which is no doubt severe. It seems shocking that at this time of day we have actually to praise judges for ordering so coarse a punishment. The really shocking fact is, that there exists, in the midst of our refined civilisation, a class of criminals insensitive to every other punishment.

THE PRACTICAL USES OF SPHYGMOGRAPHY.

In March last Dr. Anstie delivered a lecture in the theatre of St. Mary's Hospital, at the request of Dr. Sibson and some other lecturers of the school, upon the present state of sphymography; illustrating his remarks by pulse-traces and enlarged diagrams taken partly from patients in St. Mary's Hospital, and partly from other sources. The principal points insisted upon were as follows:—In the first place, as to the instrument itself, it was shown that without the new modifications for securing *solidity* of position, and for measuring exactly the amount of pressure exerted on the artery by the tactile spring (as suggested by Dr. Burdon-Sanderson), the traces obtained by Marey's instrument would be highly fallacious in diseased conditions, except to a very practised observer; but that with the new improvements the syhygmograph becomes an arm of precision of the highest delicacy and reliability. As to the forms of disease in which experience has now shown the sphygmograph to be most valuable, the lecturer stated, in the first place, that it had been shown to be of little diagnostic use in the majority of *valvular* diseases of the heart. But of *hypertrophy* it often affords most useful evidence, and (with careful graduation of spring-pressure) a very delicate quantitative test, and even, in some cases, hints of the source of obstruction which has produced compensatory hypertrophy. In the detection of "senile" degeneration of arteries, it is also of the highest value. In the case of aneurisms, a skilful and cautiously repeated comparison of the pulse-traces of the two radials will often enable us to draw most useful conclusions as to the *position* of an aneurism—e. g., whether it is subclavian or innominate, &c. Finally, the sphygmograph is of great value in the prognosis and treatment of acute pyrexial diseases. Of this fact the lecturer gave numerous clinical proofs, some of which have already been detailed in the lectures before the College of Physicians which were published in THE LANCET (vol. ii. 1867). In regard to the value of its indications for the use of wine, Dr. Anstie stated that his confidence in the correctness of the statements made in those lectures had received fresh and striking confirmation from the results of experience which he had recently gained. A large number of diagrams and actual slides served to illustrate the lecture, which was well attended by the students of the hospital and by a considerable number of the staff, and of practitioners not connected with the hospital.

TREATMENT OF OPIUM-POISONING.

In an American journal, the ***Medical and Surgical Reporter***, Dr. Wilson, of Philadelphia, relates (November, 1868), a case in which atropine was injected hypodermically, with success, as an antidote to opium-poisoning. The patient, after torical summary of the various operations of this kind which have been performed since its origin.

Dr. Sands' patient was a woman with a soft pulsating tumor at the root of the neck, behind the sterno clavicular joint, the bones composing which had undergone partial absorption. A double murmur was heard over the aneurism. The case was seen by Dr. Draper, (who made some observations with the sphygmograph,) Drs. Van Buren, Austin Flint, and others, and in consultation they all agreed that the disease was aneurism of the innominata, although there was some diversity of opinion in regard to the extent of the disease. It will be in our readers' recollection that Mr. Heath, in 1865, ligatured the carotid and subclavian in a patient for a similar affection.

A PROTECTOR TURNED TRAITOR.

A most remarkable story of coincidence comes to us from the Middlesex Hospital. On Christmas-day, 1867, a young man was garroted. Next day he bought a pistol, which from that time he always carried about with him when out at night.

On Boxing-day, 1868, he went to a dance, and, with proper regard to consistency, took his pistol with him in the pocket of his overcoat. When the party was over there was the usual search for coats and hats, and the little room in which these were placed was filled with twelve or fourteen persons. One of this number took up the young man's overcoat by mistake for his own, the trigger of the pistol was accidentally jerked, and the weapon went off, *shooting its owner*, who that day twelvemonth had purchased it to protect his life! He was admitted into hospital under Mr. De Morgan's care, with a dangerous wound of the chest, from which he has now happily recovered. After this, what critic will dare to comment upon the improbabilities of sensation novels?

GLYCOGENY.

In an article contained in the *New York Medical Journal*, Dr. Austin Flint gives the details of experiments which he thinks go far to harmonise the discrepant results obtained by Bernard and by Pavy. Dr. Flint holds that during life a constant formation of glycogen is taking place at the liver, out of either the farinaceous or the albuminous constituents of the food; but that it is no sooner formed than it is washed away by the great mass of blood which is constantly passing through that organ. During life, therefore, the liver contains only the glycogenic matter, and no sugar, as Pavy maintains; but after death, or when the circulation is interfered with, the transformation of glycogenic matter into sugar goes on; the sugar is not removed under these conditions, and can then be detected in the substance of the liver.

The publication of a new periodical, entitled "Archives of Opthalmology and Otology," to be edited and published simultaneously in English and German at New York and Carlshrue, is announced for the first week in May. The editors are Dr. Knapp (of New York) and Prof. S. Moos (of Heidelberg). The physiological connexion between the organs of sight and hearing explains the union of the two branches of medical science which will be discussed in its pages. Two handsome volumes in each year will appear, consisting each of about 300 pages. The work will be fully illustrated, and a number of men of eminence are announced as contributors.

We find that an American edition of Professor Marshall's "Outlines of Physiology, Human and Comparative," of which we had occasion to speak very highly at the time of its appearance in this country, has been published. It is edited, with additions, by Francis G. Smith, professor of the Institutes of Medicine in the University of Pennsylvania. And a second American edition of Dr. Aitken's last edition of his "Science and Practice of Medicine" is advertised.

Reviews and Notices of Books.

Vesico-Vaginal Fistula from Parturition and other causes, with Cases of Recto-vaginal Fistula. By Thos. Addis Emmet, M.D., Surgeon-in-Chief to the New York State Woman's Hospital, &c. pp. 250. New York: William Wood and Co. London: Trübner and Co. 1868.

A New Method of Conducting the After-treatment in the operation for Vesico-vaginal Fistula. By J. Goodman, M.D. 8vo, pp. 8. Louisville: Bell and Co. 1869.

This book is not so much an essay on vesico-vaginal fistula, as a record of various interesting cases that have occurred in the hospital and private practice of Dr. Emmet. He regrets very much that he has not as yet had time to present to the profession an analytical digest of the literature and statistics of the subject; but in the meantime the present volume has been offered as a contribution to this branch of surgery. And a very valuable contribution it is; not, indeed, as being a complete history of vesico-vaginal injuries, but as laying before the practitioner the details of a vast number of severe and aggravated cases, to which reference can always be made.

By no means the least merit of this book is that Dr. Emmet shows that this class of plastic operations is not merely attended by a remarkable success, but can be performed with great facility. Speaking of the operation for vesico-vaginal fistula as modified by Marion Sims, he says: "It has become more certain of success than any other operation in surgery, and long since should have ceased to be confined to the hands of comparatively few operators. In truth, no more brains or tact is needed in the execution of this than in many other operations of surgery which have long since been familiar to the many." Further on he says: "Previous to 1867 I had about 270 cases under my charge. About 200 had been cured; 5 I regarded as incurable; and between 50 and 60 returned home improved, the greater proportion of ch will be cured if they ever return. The se which obliged me to abandon as wholly in- ble several of the cases was not so much in equence of the actual extent of injury sus- d, as from excessive obesity, which rendered ossible to bring the parts into view." It hus be seen that Dr. Emmet is no ordinary ity on these subjects, and that his expe- has been unusually large.

he first few chapters he treats of the mode of preparing the patient, of the instruments necessary for the operation, with improvements and modifications of his own, and of the method of operating that has proved most successful in his hands. The remainder of the volume is a long series of cases which he has arranged, as—1st. Fistulæ from laceration of the cervix with or without sloughing, and involving a portion of the base of the bladder. 2nd. Fistulæ from sloughing of some portion, or loss of the whole base, with cases of atresia of the vagina, partial or complete. 3d. Loss of the entire base of the bladder, the cervix uteri, and the urethra. 4th. Some cases of recto-vaginal fistulæ, with points of difference in treatment or operation, not in common with the injuries of the bladder. 5th. Cases of recto- and vesico-vaginal fistulæ not resulting from parturition.

Among many cases of remarkable interest, Dr. Emmet relates two where, in the congenital absence of the uterus and vagina, the urethral canal had been mistaken for the vaginal outlet. In these two patients, from a superabundance of cellular tissue, a perfect retentive power of the urine existed, although the entrance into the bladder was so patulous that the index finger could be introduced without difficulty. We quote Dr. Emmet's own account of one case:—

> "Several years ago I was consulted by a young married lady who had never menstruated. She became engaged soon after the age of puberty, and, by the advice of her physician, she married, with his assurance that by this means the menstrual function would become established. She lived happily with her husband, but as the prediction had not been verified at the end of the second year of married life, she came under my observation. I found the vagina and uterus absent, with the dilated condition referred to of the outlet from the bladder. In connexion the bladder had been entered without either party having been aware of the malformation."

We regret that our space does not allow us to quote more at length from this volume; but we cannot conclude this brief notice without remarking that the results of the numerous cases related are in the highest degree honorable to Dr. Emmet's skill as an operator, and also to American surgery.

Dr. Goodman's pamphlet is a reprint from the *Richmond and Louisville Medical Journal*, and contains an account of a new form of catheter, intended to be worn after an operation for vesico-vaginal fistula, and so constructed that it will remain *in situ* without any retentive apparatus, and will allow the patient to sit up or walk about during the period of healing. It is a tube curved to the urethra, about two inches in length with a bulbous extremity to enter the bladder, and a button, like that of a canula, to be grasped by the vulva. It may be worn for a day or two before the operation, to accustom the urethra to its presence; and it does not slip out, either during exercise or during sleep. Dr. Goodman records a very successful case of operation in which his catheter was employed; and the plan seems quite worthy of attention. He does not say what contrivance was used to absorb or receive the urine; but more than one would at once suggest itself to the surgeon.

A Treatise on Syphilis, Historical and Practical. By Dr. LANCEREAUX, Head of the Clinical Department of the Faculty of Medicine in Paris, &c. Translated by G. WHITLEY, M.D. The New Sydenham Society. 1868.

Atlas of Venereal Diseases. By M. A. CULLERIER, Surgeon to the Hôpital du Midi, &c. Translated from the French, with Notes and Additions, by FREEMAN J. BUMSTEAD, M.D., Professor of Venereal Diseases in the College of Physicians and Surgeons, New York, &c. Philadelphia: Lea. 1868.

The treatise by Lancereaux is to be in two volumes of which the present is the first. The work is the most exhaustive book which has been published on the subject, and it has been quoted by all the recent writers of this country, America, and the Continent. It is divided into six parts: Historical Notice, Nosography, Semeiology, Etiology, Treatment, and Legal Medicine. As the author tells us in his preface, hereditary syphilis and acquired syphilis are studied separately. The latter is followed in its evolution by periods, and the symptoms connected with the last period are examined successively in each apparatus of the organism. The sections devoted to the historical notice of syphilis, including its geographical distribution, are alone calculated to exhibit the erudition of the author, and the laborious nature of the task he has undertaken. Lancereaux very philosophically treats of syphilis as a whole and as an entity; and he traces the different and varied links in the chain of morbid phenomena as the indissoluble products of one and the same cause. When speaking of its primary lesion, he says it is characterised anatomically at its commencement by the appearance, at the point of contamination, of a new growth, which forms a protuberance more or less voluminous; and he makes the varieties of the first syphilitic manifestation to consist of—first, the dry papule; secondly, the chancrous or chancriform erosion; and, thirdly, the indurated chancre.

Dr. Lancereaux alludes to a variety of syphilis wherein the disease is said to manifest itself without primary local lesion,—syphilis d'emblée, as it is termed. He allows that this subject opens a vast field for hypothesis, and although he expresses himself very guardedly, he evidently thinks that as chancre is not the cause, but the first symptomatic manifestation, of syphilis, it may sometimes be wanting; just as, at a later period, some of the secondary or tertiary affections fail to appear. As we have intimated, the work is an exhaustive treatise on the subject,—a perfect mine of information. Anything like an analysis of its contents is, therefore, quite out of the question. Two hundred pages of this volume are taken up with the consideration of the period of gummy products, otherwise called tertiary and quarternary affections; and this part abounds in clinical records, pathological observations, and anatomical details of the structural lesions induced by syphilis. The author says at the end of his preface that he has conscientiously and impartially sought the truth. That this is no mere platitude on his part we fully believe. Our knowledge of his labors leads us to give him full credit for having approached and treated the subject in this spirit. The translation appears to have been well done, and the New Sydenham Society may be congratulated on having added such an important treatise to its list of works. English readers will anxiously await the appearance of the remaining volume.

The Atlas of Venereal Diseases is certainly a remarkable book. Besides containing a large quantity of letterpress, it is profusely illustrated. As far as the drawing and coloring of the figures are concerned, we may fairly use the word "beautiful"—a term which could scarcely be applied, however, to the objects or the diseases represented. M. Cullerier is well known as one of the highest living authorities in these disorders. Dr. Bumstead himself wrote an uncommonly good and useful book on them before editing the present work. Both Cullerier and Bumstead, therefore, possess ample stores of knowledge and experience; but it is not a little curious that the latter, a well-known advocate of the dualistic doctrine, as it is called, should have edited the work of a man who repudiates that doctrine as false. The Atlas, however, so far from being the worse for this difference of opinion, is, in reality, rendered more valuable on that very account. Dr. Bumstead has introduced a running criticism on Cullerier's views wherever he considered it necessary to differ from them, and we must add that he appears to us to have the logic and balance of evidence on his side. The Atlas is diffusely as well as splendidly illustrated with chromo-lithographs, and the letterpress is excellent. As a whole, it teaches all that can be taught by means of plates and print.

Foreign Gleanings.

A SEVERE CASE OF TETANUS; RECOVERY.

A railway guard, under the care of Dr. Ademollo, of the Hospital of Grosseto (Italy), had met with a gunshot wound in the foot, which shattered the whole plantar portion. The case went on satisfactorily for seventeen days, when trismus was observed. Tetanic symptoms soon supervened, and Dr. Ademollo began treating the case energetically. For eleven days various sedatives were used, and the patient eventually left the hospital in good condition. The details of the case are long, but interesting. The following items will show that no reliance was placed in expectancy:—During the above mentioned eleven days the man took internally 85 grains of extract of opium, one ounce of laudanum, 5 grains of acetate of morphia, 45 grains of extract of belladonna, 84 grains of extract of hyoscyamus, 80 grains of assafœtida, and 128 grains of camphor. As outward means, he had half an ounce of extract of opium, almost an ounce of tincture of opium, more than an ounce of extract of belladonna, and thirty-four warm baths.—*L'Imparziale* of Florence, Dec. 16th, 1868.

PHOSPHORUS IN CATARACT.

We alluded, some time ago, to M. Tavignot's practice in paris, respecting his success in curing cataract, without operation, by means of instillation of phosphorous oil, and frictions round the orbit with phosphorous ointment. We now find in *L'Imparziale*, of Florence, of Feb. 1st, 1869, that Professor Gioppi has written to the *Gazette Med. Prov: Venete*, of Dec. 26th, 1868, to the effect that he has used this treatment in six cases, which all proved failures. He carried on the treatment for a fortnight, and, finding no change, operated in the ordinary way. Perhaps the time allotted was too short. The professor says, however, that he means to go on trying Tavignot's process.

CALABAR BEAN IN TETANUS.

In the *Gaz. Méd. de Paris* (Feb. 20th, 1869), we find a case of tetanus mentioned by M. Bourneville, in which the Calabar bean was used unsuccessfully. The patient was a boy, nine years of age, whose knee had been severely wounded. Amputation was proposed, but the parents refused, until evident signs of trismus appeared. They at last consented to have the limb removed, but the spasmodic disease made regular progress, in spite of the steady use of the Calabar bean, and the boy died five days after the amputation.

News Items, Medical Facts, &c.

CONVALESCENT HOSPITAL AT ORLEANS.—The Emperor has just purchased near Orleans an estate which he is turning into a convalescent home. The situation is beautiful and salubrious, and the institution will be open to the numerous patients of the Hôtel Dieu of Orleans, who number more than 2000 annually, and where they will have an opportunity of staying during convalescence.

MORTALITY FROM SNAKE BITES IN INDIA.—It appears from the Oude Administration Report that during the past year 1127 persons died from the effects of snake bites in that province, and from the Central Provinces Administration Report that 1874 deaths had occurred in them from the same cause during the three preceding years.

PUBLISHED BY
WM. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 7. NEW YORK, JULY, 1869.

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.,

Lecturer on Orthopædic Surgery at the Hospital.

LECTURE VII.

ON AFFECTIONS OF THE JOINTS.

Congenital dislocations and old unreduced dislocations are the subjects of which I propose to treat in this lecture. I have had occasion to point out to you lately two instances of congenital dislocation of the hip. In the child in Princess's ward, one femur alone was dislocated; while in the boy in Grosvenor ward, both were dislocated.

Congenital dislocations.—These dislocations are found at birth, and they are therefore termed congenital. They occur especially at the hip-joint. Other dislocations also occur, but they are sub-luxations rather than true dislocations; and they are found together with monstrosity, paralysis, idiocy, and alterations of the articular surfaces. In this manner, the shoulder, knee, elbow, wrist, and jaw are found in such cases to be luxated. The dislocations of which I have especially to treat, therefore, are those of the hip-joint.

These congenital dislocations of the head of the femur occur in three directions,—namely, upwards and outwards, directly upwards, and upwards and forwards; but the first-mentioned variety, or that upwards and outwards, alone requires attention at this time, the other two forms of dislocation having been seen only in fœtal monstrosities.

Dislocation of the head of the femur upwards and outwards, on to the dorsum of the ilium, occurs for the most part on both sides simultaneously, and it occurs more frequently in the female than in the male child. Thus Dupuytren mentions that, in the course of twenty years, he saw twenty-six instances of congenital dislocation of the femur, twenty-two of which occurred in female children and only four in males; and that, with two or three exceptions only, all of these were instances of double luxation. I have had seventeen cases of congenital dislocation of the hip under my care, fourteen of which have occurred in female children, and three in males. In one boy and in three girls the dislocation was single; in the remaining thirteen the dislocation was alike on both sides.

It has long been a question how this form of dislocation is occasioned. Some, as Dupuytren, have believed it to be caused by defective organization in the germ; while others, such as Guérin, believe that active muscular spasmodic retraction causes not only congenital dislocations, but also all other congenital articular deformities. And Carnochan expresses a similar notion in the following words: "Congenital displacements occurring at the ilio-femoral articulation result from active morbid muscular retraction." I would place a single fact against this theory of M. Guérin's,—namely, that in the cases of congenital dislocation of the head of the femur which I have seen, there has never been present spasmodic action of any muscle or set of muscles, whether of the muscles of the hip or elsewhere; nor have I ever known there to be difficulty in guiding the limbs in consequence of disturbed nervous action. And therefore I cannot believe, with Carnochan, that "a pathological spasmodic retraction of the muscular tissue, resulting from a perverted or disturbed condition of the excito-motor apparatus of the medulla spinalis," is the cause of congenital dislocation. So far from any disturbance of the nervous system existing in these children, they are for the most part healthy; and I am unable to call to mind an instance of unusually delicate health in any child whom I may have seen affected with congenital dislocation of the hip.

The cause of congenital dislocation of the hip, as it usually presents itself, is a purely mechanical cause. This dislocation always occurs together with a preternatural labor, and it occurs especially with a presentation of the nates. When the breech presents, the child passes through the pelvis with the legs doubled up, and the feet towards the thorax. The blunt hook, or the finger, is sometimes used to assist the passage of the child; and for the sake of traction it is necessarily placed, when employed, at the top of the thigh. But, when the thighs are flexed upon the abdomen, the heads of the thigh-bones must press against the posterior and inferior portions of the capsule of the joint; so that traction in this position will readily cause the head of the bone to escape from its shallow acetabulum.

Some very rare instances of congenital dislocation have occurred where the head of the femur was misformed and the cavity of the acetabulum imperfectly developed; where also other deficiencies and abnormalities existed. But these cases have little in common with those which I have shown to you; for in these, and in all cases of this class, the children are healthy and otherwise well developed and well nourished.

The symptoms of this dislocation vary with age. At birth it passes unobserved. When the child is lying down, the head of the femur is only slightly prominent: it may be felt, however, on rotating the limb. In the erect posture, the head of the bone becomes prominent, and presents visibly on the dorsum of the ilium above and behind the cotyloid cavity.

When dislocation of both thigh-bones has taken place, the pelvis is rendered very oblique, and the sacrum is raised; so that the abdomen is rendered prominent, and the lumbar region becomes remarkably hollow. The trochanters project unusually, and are placed nearer to the crests of the ilia than natural; and the heads of the thigh-bones are to be seen projecting on the ilia, beneath the glutei The muscles of the dislocated limb remain small, from insufficient use; but children who are thus affected are tolerably active, and can move about rapidly and without pain. Their motion, however, is very peculiar: it is, when both bones are dislocated, a rolling motion of the trunk; with more or less apparent insecurity or lameness. When the head of one femur is alone dislocated, the limb is shortened, so that the heel does not rest on the ground, and there is considerable weakness and yielding of the limb in walking; but the obliquity of the pelvis is less than when both bones are dislocated.

In the child, the lumbar curve, which in the erect position is so considerable, is effaced in the recumbent position; and in this position the head of the bone may be drawn down upon the acetabulum, and the length of the limb may be restored.

At birth the acetabulum is, I believe, never altered (in the cases of which I am now speaking —namely, those of dislocation upwards and outwards, where there is no other abnormality present) in shape or dimensions, and the head of the femur retains its normal appearance. Changes, however, subsequently take place, both in the cotyloid cavity and in the head of the bone; for the cartilage wastes and the cavity becomes partly filled up with cellulo-osseous material, and the head of the bone becomes at length somewhat irregular in shape, and its cartilage is thinned. The capsular ligament retains its integrity for some years: it becomes elongated; and as the head of the bone at length escapes through its capsule, ligamentum teres, being stretched becomes slender, and finally it gives way, when the head of the bone comes into direct contact with the ilium. When the head of the bone has passed through its capsule, a false articulation commences to be formed. Thickening of the cellular tissue with deposit of lymph takes place, which is ultimately developed into a new capsule, while a cavity is formed to receive the head of the bone by the deposition of osseous matter upon the ilium.

Treatment.—When dislocation occurs without other abnormality, both the acetabulum and the head of the thigh-bone are usually perfect at birth. There would then be neither difficulty in reducing the dislocation, nor in retaining the head of the bone in the acetabulum. The dislocation, however, is overlooked at birth, for the obvious reason that it is not suspected; and when it is discovered — probably after months or years have elapsed — changes have already taken place which tend to impede the reduction, and which prevent the head of the bone being retained in the acetabulum. Absorption of the head of the bone proceeds at the same time that the acetabulum is being filled up, while the tissues around the head and neck of the bone are undergoing degeneration —those which are stretched, according to Guérin, undergoing fibrous degeneration; those which are relaxed becoming weak and fatty; and those which are much exerted, hypertrophied.

At birth the diagnosis can only present any difficulty when the luxation is double; for when it is single, the difference in the length and direction of the limbs, and especially the difference which must exist on the two sides of the pelvis, can scarcely fail to discover the dislocation. For the most part, however, the dislocation is only suspected when the child begins to walk, and indeed it is often overlooked for years; but the peculiar gait—the lameness when the dislocation is single, and the rolling movement when both thigh-bones are displaced—is certain to attract attention. All the peculiarities of this dislocation are exaggerated when the patient is standing, and especially in walking: while, on the other hand, they are much diminished in the recumbent posture, and it is for this reason that congenital dislocation of the femur is seldom discovered until the child begins to walk alone: then the peculiar gait attracts attention.

The peculiarities of this dislocation are very strongly marked in the boy in Grosvenor ward. In this case both limbs are dislocated, and the trochanters project abnormally and approach nearer to the crests of the ilia than in their natural condition, and the heads of the thigh-bones can be seen projecting on the ilia beneath the glutei. The pelvis is thus rendered very oblique, the sacrum is raised, and the pubes carried backwards, while the lumbar and lower dorsal vertebræ are curved forward, rendering the abdomen protuberant. The knees are directed inwards, and the feet are flat. The lower limbs are weak, and wanting in muscular development, while the muscles of the arms and of the upper part of the trunk are largely developed, and are much used in progression. This boy is twelve years of age, and the changes to which I have referred have already taken place in him, so that the head of the bone is more or less fixed in its new cavity. But before this period has arrived, and while the cartilaginous surfaces retain their integrity, the dislocation may be reduced, and the head of the bone may be retained in the acetabulum. It is probable that until muscular retraction has taken place, this replacement may always be effected by manipulation under chloroform, and that the head of the bone may be retained in the acetabulum with the help of bandages and splints; but when retraction of the powerful muscles about the neck of the bone has taken place, although the dislocation may be reduced under chloroform, these muscles again displace the bone. These considerations induced me to propose the subcutaneous section of the muscles which are inserted into the trochanter.

It must be borne in mind that there is no difficulty, even after some years have elapsed, in restoring the length of the limb, by drawing down the head of the femur to rest on the acetabulum; but there is great difficulty in retaining the head of the bone in that position. I therefore resolved to divide subcutaneously those muscles which tend to displace the bone,—namely, those which are inserted into and about the trochanters, especially the glutei and the rotators. And I found that, when the head of the femur was drawn down to the acetabulum, these muscles having been divided, it remained in that position and did not undergo displacement, even though retentive appliances were not immediately used. This, then, is the operation which is applicable in these cases, and from which I have derived in several instances excellent results.

After the section is complete the limb should be fixed to a straight thigh splint, and sufficient extension be made to hold it in the desired position; and after an interval of six weeks or two months passive motion may be employed. After this time consolidation about the head of the bone will have advanced sufficiently to prevent any displacement.

In children under two years of age it will probably not be necessary to have recourse to this operation, for the head of the bone will probably be retained after replacement, and without subcutaneous section; but after this age, displacement will scarcely be prevented without operation.

Old unreduced dislocations.—The use of chloroform has compelled us to modify our opinions on various questions relating to operative surgery, and especially this is the case where it is necessary to overcome the influence of the muscles; as, for instance, in the reduction of a dislocation.

Before chloroform was in use, it was the law that in dislocations of the hip attempts at reduction should not be made after eight weeks of displacement, and in dislocations of the shoulder the limit was fixed at three months.

Now, when dislocation has occurred, and the capsule is rent, inflammatory thickening takes place around the extremity of the displaced bone, adhesions form, and ultimately a new capsule is developed, the surrounding cellular tissue becoming condensed. In the orbicular joints especially, motion is easily established, and the new capsule becomes perfected through motion; it is furnished with a smooth lubricating lining, and in many instances free motion is in time permitted. Also a cavity is formed to receive the head of the bone. If the head rests on muscle, the muscle becomes dense and is hollowed out for its reception; if it rests on bone, a cavity is formed to receive it, in part by absorption of the old bone, such as the ilium or the scapular, in part also by the deposition of new bone, and this is at length lined either by ligamentous substance or by a smooth porcellaneous deposit. But, on the other hand, the head of the bone may be displaced in such a manner as to press on neighboring vessels and nerves, so that not only is motion so painful that it cannot be borne, but in such a position the pressure of the head of the bone, even while at rest, causes in many instances more or less constant pain. So long as it is necessary to keep the limb at rest, a new joint cannot be formed; for motion is absolutely necessary, not only for the perfection of the new articulation, but also for its development.

Thus, in old unreduced dislocations, two distinct conditions may be observed. On the one hand, nature remedies the effects of a dislocation by the development of a new joint; while, on the other hand, adhesions form around the head of the bone and consolidation takes place, which tend to fix the limb and to prevent painful motion. In the former case the limb daily gains strength, as the new joint becomes more perfect; while in the latter, atrophy of the limb results.

In the *treatment*, therefore, of old unreduced dislocations, with the advantage which chloroform gives us, the amount or absence of repair must be considered, rather than the length of time during which the limb has suffered displacement; for although it may remain a question for the operator to decide whether it is desirable to attempt the reduction of a limb which is regaining power and motion, it can scarcely be otherwise than right to attempt to reduce a dislocation where the limb remains motionless or painful.

I believe that these questions of motion and pain may guide us perhaps in every instance in which we are called upon to decide on the feasibility of an operation in such cases; for where the limb has not been used, very slight change takes place in the articular surfaces, so that I am unable to fix a limit to the period at which it could truthfully be said that such an operation would be unjustifiable. The health and the age of the patient are questions to be considered, not alone before performing this operation, but in every other operation; and therefore these questions will of course be considered by every prudent surgeon before he determines to reduce an old dislocation. When I tell you, however, that the acetabulum may retain its form and depth and its cartilage after the head of the femur has been dislocated for thirteen years, you will understand that it is difficult to assign a limit to these operations.

After the patient has been placed fully under the influence of chloroform, so that muscular resistance has entirely ceased, the adhesions which have formed around the head of the bone are to be broken up by free motions of the limb—to-and-fro motions and motions of rotation—which shall leave the head of the bone free and movable. And the adhesions are to be broken through on applying only moderate force. Violence can never be justifiable. When the head of the bone is fully loosened from its attachments, the limb is to be so manipulated that the head of the bone is drawn towards or carried into its articular cavity; and there it is to be immediately fixed by appropriate bandages, lest it should again slip out. I have never known the head of the humerus even to become again displaced after the limb has been bandaged and supported by a pad in the axilla.

When pain has subsided, passive motion may be commenced; perhaps after ten days or a fortnight shall have elapsed.

In some cases of old dislocation it may be necessary to divide the tendons of retracted muscles before attempts at reduction are made. This was done in the case of Elizabeth C——, in Princess's ward, in whom it was necessary to divide some of the flexors, such as the flexor carpi radialis, the flexor carpi ulnaris, the flexor sublimis and palmaris longus, before an old dislocation of the wrist could be reduced. Whenever it is necessary to divide tendons, the punctures should be allowed to heal before extension or any effort at reduction of the dislocation is made. In this case, after the punctures had healed, chloroform was administered and the adhesions were ruptured; the hand was then readily restored to its normal position, and so it was bound on to a straight splint. This patient, whose hand had previously been entirely useless, regained the motion of her fingers and the use of the wrist, after six years of displacement and loss of power.

In these cases, then, of old dislocation, attempts at reduction may be made so long as the limb remains painful or motionless. And when much muscular retraction has taken place the tendons should be divided, and the punctures be allowed to heal, before the adhesions are broken through, and the limb is replaced in its normal position.

LECTURE VIII.

ON DISTORTIONS OF THE TRUNK AND NECK.

The distortions of the trunk and of the neck, to which I have to direct your attention, are occasioned by curvatures of the spine, caries of the spine, and wry neck.

Curvatures of the spine are met with, especially, in three varieties,—namely, anterior curvature, posterior curvature, and lateral curvature.

Anterior curvature of the spine affects, for the most part, the lumbar region of the spine, and is an abnormal increase of the physiological curve of that region. It occurs also, however, in the cervical region in infants. It is then due to rickets and want of muscular power, and sometimes also to caries. When anterior curvature takes place in the lumbar region, it is, for the most part, of rachitic origin. Sometimes it is hereditary, and then, also, it depends on a rickety condition; and, again, it results, as I mentioned in the last lecture, from congenital dislocation of the heads of the thigh-bones. In these cases, distortion is sometimes very remarkable. I lately saw a child in whom this result of dislocation had been treated during three years as a primary affection, and without any suspicion being excited as to the immediate cause of curvature. Anterior curvature is for the most part limited to the lumbar region of the spine, the dorsal and sacral portions being implicated only in so much that their normal curves become exaggerated. Occasionally, however, a part, or even the whole, of the dorsal curve may be reversed. The anterior curve will then consist of the lumbar vertebræ together with the dorsal.

Treatment.—This affection is usually developed in childhood. In childhood, however, the normal curves of the spine disappear in the horizontal position. Hence it is obvious that the recumbent posture must be in itself a powerful agent in the treatment of this form of curvature. Doubtless, whatever the cause of anterior curvature may be, the treatment should be followed whilst the child is recumbent. And the supine position is that in which the child should be placed; for the shoulders can then be raised, whilst, in addition, the thighs may be flexed on the pelvis. In this manner an anterior spinal curve may at length be removed.

When this form of spinal curvature has been induced by rickets, it is especially important to observe the recumbent posture: for the upright position tends to increase the spinal curve, and, further, will probably also occasion some distortion of the lower limbs.

Posterior curvature of the spine is a much more common affection than that last mentioned. It occurs both in childhood and in old age; and, indeed, no age is exempt. In infancy, all the dorsal vertebræ are engaged in this curve; while in youth the middle and upper portions of the dorsal spine are especially implicated; and in old age the spine is most bowed in the upper dorsal region. In infancy, the muscular system is mainly affected; while later in life the skeleton becomes altered, and the intervertebral substances are compressed.

Treatment.—In childhood the horizontal position should be observed until the curve is removed. Then, as strength is gained, means may be taken to develop muscular power; and in proportion to its development, so the antero-posterior curves of the spine become formed, and the erect position can be maintained. In more advanced age, mechanical support is necessary to redress the bent spine or to assist nature.

These remarks on anterior and posterior curvature lead me to a more important part of my subject,—namely, lateral curvature of the spine.

Lateral curvature of the spine is that form of distortion in which the vertebræ deviate in a lateral direction from the mesial line of the trunk. This affection is either incipient or confirmed.

By incipient curvature is understood such a condition of lateral deviation of the spine as is removable in the recumbent position, with the help perhaps of some slight pressure; while a confirmed curve requires the application and long continuance of mechanical means for its removal. There are many cases of this description to be seen both among the out-patients and in the wards of the hospital; and it is therefore due to the governors of the hospital to state publicly that it cannot now be said, as it was stated on a former occasion by Sir Benjamin Brodie, when lecturing in this theatre on curvatures of the spine, that "the hospital will not afford you the information which you stand in need of. When," said Sir Benjamin, "I first became engaged in a considerable private practice, and cases of curvature of the spine were presented to my observation, I was in doubt as to their nature and treatment. I knew nothing of them from my own experience, and I had learned nothing of them from my teachers. I felt that in this respect my education had been imperfect, and it cost me no small trouble to supply the deficiency. Your situation in this respect," continued Sir Benjamin, "is probably not very different from what mine was formerly." This reproach is now removed; for at least more information can now be gained in the hospital on this and kindred subjects than could formerly be obtained. And, although special wards are not yet set apart for the treatment of deformities, numerous beds are devoted to these cases. So it would appear that our hospital is, in this respect at least, in advance of other institutions of a similar nature; for only so late as 1865 it was stated that "there is not a single case of lateral curvature of the spine to be found under treatment in the wards of any general hospital in London, though there are some thousands of poor people in this metropolis, principally girls and young women, who are struggling for a livelihood, and suffering not only from unsightly deformity, but from seriously impaired health consequent on such deformity." I say that this reproach cannot attach to St. George's Hospital, since at the time the above statement was published, cases I might almost say without restriction were admitted into and treated in the hospital, not alone the curvature of the spine, but of every other known deformity. Thus, I have the opportunity of showing you the treatment of spinal curvatures, as well as of other deformities.

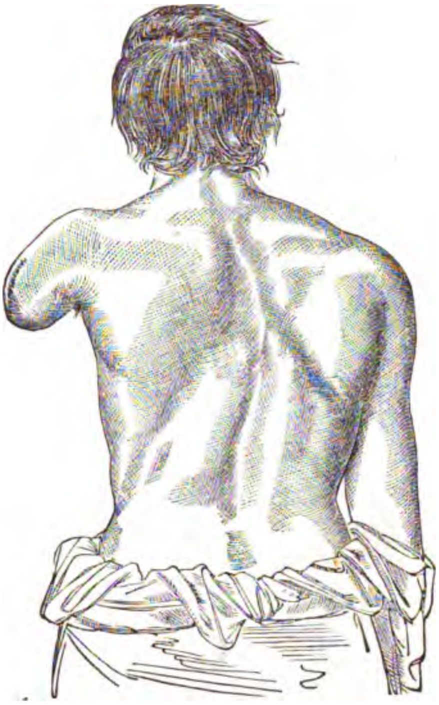
Lateral curvature is the most common form of spinal curvature. It occurs more frequently in the female than in the male sex; it seldom commences after the age of puberty, and it does not commonly occur as a primary affection.

The principal predisposing causes of lateral curvature are debility—muscular or constitutional, acquired or inherited—and rickets; and the exciting or proximate causes are bad habits of sitting or standing,—such as sitting for prolonged periods in a constrained attitude, as is often assumed in drawing or writing, and, as frequently happens in schools, when the back is not supported, and the muscular strength is insufficient to enable the child to sit upright; the pelvis and trunk are then inclined to one side or the other to obtain temporary relief. But the most common cause of lateral curvature is the habit of standing on one leg. This habit is indulged in to a very great extent by young girls, to gain relief, either in consequence of some local weakness or from fatigue; for weariness is readily induced during the period of growth, and especially when growth is rapid. This attitude causes the hip to become prominent, and the pelvis to be inclined towards the opposite side. Together with this obliquity of the pelvis, the spine also becomes curved. At first the curve is temporary, and is removed in the recumbent position; but at length, as the obliquity of the pelvis becomes permanent, so the curve also becomes confirmed; and thus the equilibrium of the trunk is disturbed. Equilibrium is restored by means of secondary or compensating curves; and these are formed in a regular series, and are determined by the position of the primary curve.

Debility, then, is the chief predisposing cause of lateral curvature of the spine; and the most frequent exciting cause is obliquity of the pelvis, which is induced by bad habits of sitting or standing. But although these are the chief causes of obliquity of the pelvis and lumbar curvature, yet others exist; for whatever may act mechanically in disturbing the equilibrium of the body will induce spinal curvature. Thus inequality in length of the lower limbs, whether produced by a bent tibia or femur, by flat-foot or knock-knee, by muscular contraction, articular disease, or partial loss of muscular power, will induce obliquity of the pelvis and a primary lumbar curve.

Again, another series of causes exist which induce spinal curvature,—namely, such as alter inordinately the relative power of the upper limbs. Thus the power may be increased or diminished —increased by extraordinary use, as through carrying a burden on one arm, or as occurs in certain trades, where one arm is much more employed than the other; and thus it is found that nurses, needlewomen, tailors, shoemakers, compositors, and some others are unusually liable to affections of this kind. And when muscular power is diminished, as through paralysis, partial or complete, of an upper extremity, or by amputation, lateral distortion of the spine occurs in the dorsal region, with the convexity of the curve towards the more powerful muscles. (See Fig. 21.)

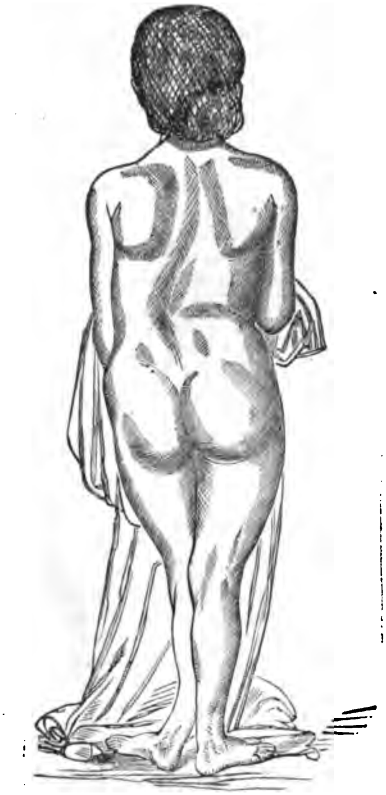
Fig. 21.



Some of the causes above enumerated are in themselves sufficient to induce spinal curvature; but this effect is produced both more rapidly and with more certainty when there is a condition of general debility present, whether as in convalescence or through overgrowth, or through insufficient food and overwork, than in health.

Rickets is another cause of lateral curvature. Rickets, however, is a general disease which involves not the bones only, but every tissue of the frame. It occurs sometimes as an hereditary affection; but much more frequently it is developed after birth, through exposure to cold and through insufficient or improper food. Diarrhœa is established, and is followed by wasting and pallor, and subsequently by swellings of the ends of the long bones. The whole skeleton may become more or less softened, and then the bones become curved through mechanical causes. Especially the lower limbs become curved, whereby the pelvis is rendered oblique, and spinal curvature is induced. In this form of disease, not only is spinal curvature induced at an earlier age than when it arises from debility, but it is of an infinitely more severe form. In the case which I show you, and from which Fig. 22 was taken, rickets was first developed at eight years of age, and the child is now thirteen years old. The lower limbs first became bent; then the pelvis was tilted to one side and flattened, and the spine became curved. Distortion is never so great in childhood, from any other cause, as when it is induced by this form of disease.

FIG. 22.



This rickety condition of the spine is sometimes though rarely developed without the long bones being affected. There will then probably be seen also rickety deformity of the ribs and of the sternum.

Also, there is a form of curvature which is transmitted with a strumous diathesis, and which pervades certain families. I know families, almost every member of which, in perhaps two generations, has been thus afflicted—some severely, others slightly; but all, or nearly all, have been affected with spinal curvature. In more than one instance I have had reason to believe that this affection had its origin in the excessive exhibition of mercury. In whatever manner it may be induced, however, such disease is generated in these cases as occasions both constitutional and muscular debility.

There are still two other very rare varieties of lateral curvature to which it is scarcely necessary to allude,—viz., malformation of the vertebræ, and effusion into the cavity of the thorax. In the former there is occasionally seen either a deficient development, or an excess of development in the lateral halves of some of the bodies, and indeed of other portions also of the vertebræ. There is a remarkable example of this malformation in the museum at Vienna, which I lately examined, and which consists of four half-vertebræ, with their half-arches and processes in excess. These occasioned curvature of the sacrum, slight curvature in the lumbar and lower dorsal regions, considerable curvature in the middle dorsal region, and also a considerable curve in the upper dorsal region. Effusion into the cavity of the thorax, and which is followed by collapse of one side, is subsequently compensated by enlargement of the opposite side. In this instance, the curve occupies the entire dorsal region.

On the formation of spinal curves.—From what has already been said, it will be understood that when a cause acts mechanically from below and produces obliquity of the pelvis, it must in the first instance give rise to a lumbar curve, just as wry-neck will first occasion a cervical curve. And as the causes which act from below upon the spine are both more varied and more frequently met with than those which affect the upper extremities or the neck, it is found that spinal curvature commences much more frequently in the lumbar than in the dorsal or cervical regions.

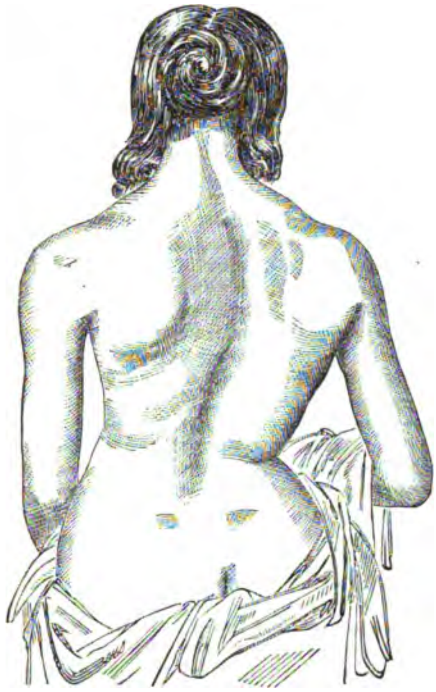
In the upper classes, amongst whom lateral curvature is common, it is the rule that the lumbar curve is first formed; while in the laboring classes, who use their hands and arms much, in carrying burdens and in other manual labor, the dorsal curve is very frequently first developed. A spinal curve cannot, however, remain single except in the horizontal position; but that the equilibrium of the body may be restored, a second or compensating curve must be formed, otherwise the erect position could not possibly be maintained. But a primary curve is never entirely compensated by a secondary curve, and therefore a curve forms above and below it. Thus a dorsal curve is always followed by one above as well as below, and a severe lumbar curve not only occasions a dorsal but also a sacral curve. One curve runs into the other, so that as one forms another is forming.

Thus a primary curve may be lumbar, dorsal, or cervical, and the position of the primary curve is determined by the exciting cause of distortion; while compensation takes place through the formation of secondary curves, which are produced by the muscular effort to maintain the erect position. These curves are always undergoing change, and becoming more rigid and compressed, until at length the height of the trunk may be considerably diminished.

The symptoms and external characters of this affection vary according to the region in which the primary curve is formed, and also as to the amount of compensation which has taken place. When, from any affection of the lower limbs, the pelvis has become oblique, the spine must become curved in the lumbar region; and from the concurrence of these two conditions,—namely, the depression of the ilium on the side of the lumbar convexity, and the loin falling in through the recession of the lumbar vertebræ in the formation of the lumbar curve,—the hip becomes prominent. This is a constant, and one of the most striking symptoms, and it may always be seen before a secondary dorsal curve is formed. These several points are shown in Fig. 23.

Again, when spinal curvature commences in the dorsal region, or when a compensatory curve has been formed in this region, the shoulders are not placed on the same level,—one is raised while the other is depressed, and the scapula becomes unduly prominent on the convexity of the dorsal curve. The shoulder is popularly said to be "growing out."

FIG. 23.



This increased prominence of the shoulder is due, in part, to the increased angularity of the ribs, and in part also to muscular action. In the formation of the lateral curve, the vertebræ become somewhat twisted or rotated, and consequently the angles of the ribs on the convexity of the curve project abnormally, while the ribs themselves are rendered more horizontal in their direction, and are more widely separated from each other than in their normal condition. But on the side of the concavity the ribs become oblique and are depressed, so as to lie one upon another, or even to overlap one another. The flattening of the front of the chest is also often remarkable; but on the side corresponding to the concavity of the spinal curve the ribs become unduly prominent, and thus the greatest diameter of the chest, in an advanced case of dorsal curvature, is in an oblique direction from behind forwards.

(To be continued.)

Clinical Lecture

ON A CASE OF

ANEURISM OF THE FEMORAL ARTERY, WITH RUPTURE OF THE SAC.

By JAMES PAGET, F.R.S., D.C.L.,

Surgeon to St. Bartholomew's Hospital.

(Shorthand Report, revised by the Author.)

I propose to speak to you this morning, gentlemen, on a case which you have observed for several weeks past—namely, that of the man who had aneurism of the upper part of the femoral artery, for which I tied the external iliac, and in whom, subsequently, secondary hæmorrhage ensued. The man is now so far recovered that I may speak of his case as being nearly ended: and, if anything fresh should occur, it will be really in the nature of an accident, almost independent of the original disease.*

"John S—, aged thirty-four, was admitted into Darker ward on Dec. 2nd, with a pulsating tumor extending from an inch and a half below the crural arch to half an inch or more above it. There could be no doubt of the nature of the tumor, for not only could a bruit be heard with the stethoscope, and the pulsation be very distinctly felt, but a distinct thrill could be detected on placing the finger on the tumor." We therefore determined to ligature the external iliac artery somewhere at, or just below, the middle part of its course. The patient was kept in bed for a week, to accustom him to sleeping on his back, or indeed, to sleeping in the hospital at all; for among the singularities of his case was a remarkable wakefulness. "On Nov. 9th the operation was performed. It had nothing remarkable in it. The wound resulting from the operation was left open."

On that part of the case I shall first comment. Indeed, my whole lecture will be after the fashion of a running commentary on the several particulars of the case.

The wound made for the ligature was left open. This was in accordance with a rule which I believe will hold for the large majority of the deep-seated arteries that may be tied. You know the general rule in regard to the selection of wounds in which to attempt union by the first intention: that unless there be a reasonable probability of that manner of union being successfully achieved, it had better not be tried for. The attainment of union by the first intention is an admirable result; but a failure is often attended by serious consequences,—chiefly, the serious consequence of the materials produced in the first processes of inflammation becoming infiltrated among all the textures in the deeper part of the wound. In the case of the wound made for the ligature of such an artery as the external iliac in the middle part of its course, there are conditions which render it in the highest degree improbable that union of the whole wound by the first intention should be attained. The wound is deep in proportion to its length; it passes through several very different textures, which have different capacities for retraction, and which slide upon one another, so that all wounds made through them are very apt to become valvular. Observe, also, that the deepest part of the wound is made in textures which are looser than any of the textures that you pass through,—the very loose connective tissue and fat which join the peritoneum to the transversalis. Then, again, the wound is one of which the parts cannot be kept absolutely at rest. They cannot be firmly bandaged down into contact with one another, and the ordinary movements of extreme respiration, of accidental coughing, of passing urine, and of defecation, all disturb the condition of the wound. And, lastly, the wound is left with a ligature in it.

Those conditions, all put together, make the union of such a wound as must be made for the ligature of the external iliac artery in the highest degree unlikely to be a union by the first intention. Therefore it should not be tried for. It is to be expected that, in such a case, the result of the attempt would be that, in a day or two after the infliction of the wound, the products of inflammation would be infiltrated into the loose texture external to the peritoneum, or between the muscles. This is not a mere guess at what would happen; for, in addition to several cases in which I have seen minor disturbances of the kind ensue from closure of wounds over deep seated arteries, I have seen two in which I could not doubt that a fatal result was due to it; two cases of ligature of iliac arteries, in both of which it was clear that death ensued from the filtering of inflammatory products external to the peritoneum, and in the other textures between the external wound and the artery itself.

---

* The patient has left the hospital, well.

The rule, then, in regard to ligature of deep-seated arteries, holds especially for such an artery as the external iliac, and still more for the common iliac. And if you read the records of cases of ligature of the lower part of the carotid, or the proximal part of the subclavian, you will find illustrations of the same rule. You will find that, not rarely, death has ensued through the extension of suppuration down into the mediastinum, or into some of the deeper textures of the neck; and in some of these cases I can hardly doubt that it ensued from the penning up of the first products of inflammation at the bottom of a wound, which was closed at its surface. As a general rule, therefore, unless you have very reasonable expectation that you can keep all the parts of the wound close together and at rest, you should not close a wound made for the ligature of a deep artery. You need not be in any fear of leaving an artery exposed, any more than you would be of so leaving any other tissues. There is no special sanctity about arteries, that they need be shut up with more precision than other deep-seated parts.

But the very thing that we tried to avoid in this case happened, and through that which I could not control,—namely, the swelling of the divided muscles. Upon this point I have spoken to you already in the course of the year; the tendency of divided muscles, not to retract when divided, but even at the very time of operation to remain in position, and afterwards to swell up and close the wound. Hence it is that if a wound be made through muscles into loose texture below them, it is very likely to be such a wound as will be followed by deep inflammatory infiltration. There is a very common belief that muscles retract upon being divided; but if you watch a circular amputation, or an amputation by flaps, through the fleshy part of the thigh, you will see that the muscles retract less than the other soft textures do. At the first passing of a knife through a muscle, it contracts, and draws back quivering with true muscular contraction; but directly afterwards it elongates, and then it remains for a time quivering. If you put a muscle on the stretch, and then divide it, it will retract to just its middle average length,—that is, to the length which it has, not in its fullest muscular contraction, but according to its elasticity. The retraction of muscles after being divided is dependent, not on their peculiar muscular or so-called vital contractility, but on their elasticity, the merely mechanical elasticity which they possess. Now, the muscles are amongst the least elastic textures of the body. The skin is more elastic, and retracts much more; the subcutaneous tissue retracts much more; even some fasciæ retract more than muscles; the ordinary connective tissue retracts more. Watch any considerable operation in which muscles are divided, and you will see that the muscles only retract when divided after being put upon the stretch; so that, in an operation such as this was, for the ligature of the external iliac, you have to use artificial retraction to keep the muscles asunder, that you may see where you are operating. More than that: after the operation, the muscles, being the most vascular textures you have divided, swell up most; so that the next day, or the day after, you find them swollen, pouting, and bulging at the external wound, and closing it. This was shown, not only in the patient for whom I tied the external iliac, but also in a man who still lies close by him in Darker ward, from whose thigh I removed a deep-seated tumor. The poor fellow has now the tumor recurrent, and growing out through his muscles. To remove his tumor, which lay in close contact with the femur, I had to divide a large extent of the vastus externus dividing the fibres transversely to their direction, and putting them therefore in the position in which you would have supposed that immediate and wide retraction would ensue. None ensued; and the next day the wound was completely closed, and all its deep-seated parts shut up dangerously by the swelling of the muscles, and I had to pass my finger into the wound and let out serum and some bloody fluid.

In this man, then, upon whom I tied the external iliac, even the next day the muscles had swollen and shut up the external wound, and it was evident that serum, or some of the first products of inflammation, had collected underneath. Therefore on that day I gently separated the edges of the muscles, and let out this fluid. On the day after a similar thing had occurred, the muscles being bulged at the external wound. Again we could feel that there was fluid beneath them, and again the fluid was similarly let out. But I believe that by this time the mischief had begun on which all the subsequent unfavorable progress of the case depended; for from that time onwards it was plain that suppuration was going on in the deepest part of the wound, and although from day to day the quantity of suppuration diminished, yet we found, upon deep pressure about the wound, that some pus would always well up from its bottom. On that point, however, I will speak to you when I come to the latter part of the case.

To go on with it in its course. The operation was performed on the 9th of December; on the 20th it was observed that some pus which flowed from the deeper parts of the wound was bloodstained, and an occasional bloodstaining of the pus was observed from day to day onwards. On some days the pus was quite healthy; on others there was a little, on others yet more, staining with blood, and once or twice a little clot of blood was seen. This occasional bloodstaining of pus that flows from a part where a large artery has been tied is always to be looked on with some apprehension. It does not necessarily imply mischief, but it may always suggest to you that something like leakage is going on from the tied bloodvessel,—a leakage, it may be, from so small an orifice that it can be afterwards completely healed up and no mischief follow, but which may be from an orifice likely to enlarge; and in such cases it may be well to adopt the precaution which I find recorded as having been taken here,—the abdominal tourniquet was kept ready to be applied in case of the patient bleeding.

On the 26th,—that is, seventeen days after the operation,—the ligature of itself came away, and from that time onwards the healing of the wound was more rapid, and there remained only a small aperture through which the pus from the deeper-seated parts continued to discharge. On the 31st it is recorded that the pus was again healthy. But after that date there were again occasional discharges of bloody pus, keeping us still in apprehension of hæmorrhage: and "on the 11th of January, without any material change in the patient's general condition, or in the aspect of the wound, blood flowed profusely from it. A hæmorrhage took place to the extent of about ten ounces, and it was so rapid that this quantity had flowed before the sister of the ward could get to the man. When she pressed the wound down firmly with a towel, the bleeding ceased, and by the time the house-surgeon was called no blood was flowing, and no further information could be obtained as to the source of the blood." Severe hæmorrhage had, then, ensued on the thirty-third day after the performance of the operation.

A single hæmorrhage of that kind, coming after the ligature of a great artery, does not necessarily dictate the ligature of any other artery, or any other severe proceeding. There are cases enough on record in which a single hæmorrhage has been followed by complete healing, without further interference with the wound. The plan which I adopted here, and which I should recommend under similar circumstances, was a considerable reduction of the patient's diet. Very small diet is enough for healing, and when there has been considerable hæmorrhage from a possibly ulcerating artery, the object to be had in view is to reduce the force of the circulation, so that, while leaving it sufficient for all healing purposes, it will not be over-much for an artery that can bear but little pressure of arterial blood. I remember a very striking instance under the care of my former colleague, Mr. Lloyd, who had tied the external iliac artery for a case of aneurism of the upper part of the femoral. The wound did badly, and there came one day a profuse hæmorrhage, some three or four weeks after the ligature. He made no further change in the management of the case than to apply a compress, and to reduce the patient from what had been full diet to our milk diet; and from that time onwards the wound healed much better than it had been healing before, no further hæmorrhage occurred, and the man recovered. I adopted that measure here, hoping that by reducing the force of the circulation, while still leaving abundant force for the purposes of healing, the hæmorrhage would not return.

On the 15th of January—that is, on the thirty-seventh day—there was another hæmorrhage, to the extent of six ounces. On the occurrence of this second hæmorrhage we held a consultation as to what should be done, and the result was that a majority of us, if not all, advised that if hæmorrhage should ensue again the best proceeding would be to lay the wound wide open, and tie whatever might be found to be the bleeding part or bleeding vessel.

Consider now, in a case of this sort, what ought to be done. The external iliac artery had been tied, and secondary hæmorrhage had occurred at a long date from the ligature, and even at a long date from the separation of the ligature. In a case such as this, where the wound is very nearly healed, and the blood issues from but a small remaining aperture in the wound, you may have, as we had, no guidance whatever to tell you whether the bleeding comes from the upper or from the lower part of the vessel, or from another source altogether. Everything is closed to you except a single aperture which leads down to a place where a large vessel has been tied. If there were an opportunity, in such a case as this, of trying the effect of pressure on the bloodvessel above the supposed point of bleeding, you might be able to decide whether the bleeding comes from the upper or from the lower end; but we had no such chance. Now the part of the artery below the ligature is, in these cases, to say the least, quite as likely to bleed as the part above; for long before the lapse of three or four weeks, the collateral circulation is so completely established that the stream into the lower part of the artery is very nearly as forcible as the stream into the upper part. You have, therefore, at least two possible sources of hæmorrhage: the direct stream of arterial blood down to the place where the ligature was applied, and where the artery may be ulcerated, or torn after too weak healing; and the collateral streams of blood, passing into the lower part of the artery, and then coming upwards to the seat of hæmorrhage, and issuing from some point of ulceration or tearing of the artery.

The courses that were open in such a case were: first, the ligature of the common iliac artery; secondly, the plugging of the wound, filling it up with lint, with or without some astringent, such as the perchloride of iron; and, thirdly, the laying of the wound wide open, so as to meet whatever contingency might ensue, and tie whatever might be bleeding. These are the three courses which would be open to you in a similar case.

Against the first of these proceedings—the ligature of the common iliac artery—there was this objection (a final one): that we could have no certainty that the ligature of the common iliac artery would control the bleeding. As Mr. Callender especially suggested, if the bleeding came through the collateral circulation and from the lower end of the artery, it might be derived from the junction of the internal mammary and the epigastric, which might bring blood down to the femoral from the subclavian. The excellence of this objection was proved, if I may so far anticipate the conclusion of the case, by what we observed at the final operation,—that pressure upon the abdominal aorta did not stop the hæmorrhage.

Now, it is a rule never to be departed from, unless for some very evident reason, in the treatment of secondary hæmorrhage, that you should not proceed to the ligature of a large artery distant from the wound unless you have first proved that pressure upon that artery arrests the bleeding for a time. Here we had no opportunity whatever of ascertaining this; for although the abdominal tourniquet was at hand and placed upon the patient, yet before it could be applied fairly the bleeding every time ceased. But the rule I have just given you was strikingly impressed on my mind by a case that I remember to have seen some years ago, when it was proposed to tie the external iliac artery for secondary hæmorrhage after amputation of the thigh. The operation, however, was not done; and the patient died; and then it was ascertained that the hæmorrhage had come from the artery of the sciatic nerve, a branch of the internal iliac,—an artery, therefore, which the ligature of the external iliac would in no way control.

The tying of the common iliac artery, then, was deemed uncertain,—though certainly it would have been very dangerous to a patient in the reduced condition in which this man was. The second suggestion—that of plugging the wound—was thought most likely to prove insufficient; and not insufficient only, but very damaging, in case it should come to the necessity of doing something more. To lay open a wound which has been plugged with lint and astringents is a much more troublesome matter than to lay open a wound which is frank and clean.

Therefore, on the occurrence of a third hæmorrhage, on the day after the second, I came down early in the morning and proceeded to lay open the wound,—to do whatever there might be found necessary. The wound was, in the first instance, laid open from its upper end to its lower, and then extended upwards till the whole space in which the tied artery lay was fairly exposed. Being thus exposed, I found at first no hæmorrhage at all,—an event which should never surprise you when you are seeking for either a wounded or a ruptured artery, for at the time of the operation it is not at all infrequent. Often the orifice through which the artery bleeds is by some accident closed, and you have to remove a clot, and sponge this way and that, before you get sight of the hæmorrhage for which you are operating. In the further course of the operation I found that which I ought to have suspected before,—namely, that the bleeding did not proceed from the tied part of the artery at all, but from the aneurismal sac. I ought to have suspected this before, because for three or four days before the final hæmorrhage we had observed a considerable swelling over the seat of the old aneurismal sac. The sac, as we had observed it from day to day, had pulsation within three or four days of the first ligature, due, no doubt, to the collateral circulation finding its way to the lower part of the femoral, and thence upwards into the sac, and so to the seat of the ligature. That pulsation had gone on, slightly diminishing from time to time; but, as I said, from three to four days before the final hæmorrhage a considerable swelling was observed on and about the sac. This swelling ought to have intimated to me the possibility of rupture of the sac, and, if so, that it was the sac which was bleeding into the wound, and not that part of the artery which had been tied.

Finding, then, that the source of the hæmorrhage was the aneurismal sac, I laid open the whole length of the sac from the original wound, into the remains of which it had burst, cutting through the crural arch, and to the upper part of the femoral artery. The sac, being thus freely laid open, was emptied of its clots; and then we came in sight of what was bleeding. Blood was rushing pretty quickly up through the femoral artery into the sac. A finger was at once put upon the bleeding orifice, and then the femoral artery was tied. But after the femoral artery was tied, as the account of the case fully records, but as I may tell you in fewer words, we found still a bleeding into the lower part of the sac. Blood was streaming into the sac from some arterial branch that opened into it near the femoral trunk. The sac was a dilatation of the upper part of the femoral and the lower part of the external iliac artery; and into its walls there opened some other arterial branch, we could not tell what. It might have been an external or an internal circumflex; but in the disturbance of parts we found it impossible, and it was very unnecessary, to ascertain what this artery was. It was tied; and on tying it the whole bleeding ceased. The patient was then left with a very wide open wound, with the remains of the aneurismal sac at the bottom of one part of it; and in another part the external iliac artery healed after the separation of its ligature. The ligature separated from the femoral after fourteen days; and granulations have formed over the whole length of the wound, and are in part covered with new cuticle.

From the time of this second operation the case, so far as mere surgery is concerned, went on simply. The troubles of the case from that time consisted in the difficulty of maintaining alive a man so utterly exhausted as, after this large operation, the patient was. He was brought out of his exhaustion by the incessant care of dressers, who watched him day and night: by the use of nutrient enemata as long as he was unable to retain food taken by the mouth, which was for a period of two or three days; and then by continual careful feeding on slightly increased diet.

The point on which I wish chiefly to speak to you is this occurrence of rupture of the aneurismal sac after the ligature of an artery. It constitutes the chief fact in a distinct set of cases in the history of aneurisms and of ligature for curing them. It is not a very rare event. In a case in which I tied the subclavian total ruin ensued through this rupture of the aneurismal sac. All did fairly at the seat of ligature; but the sac below ulcerated or ruptured, hæmorrhage ensued, and the man died. And in records of ligature of the femoral for popliteal or for femoral aneurisms, the same thing will be found to have happened not very rarely,—rupture of the sac, often at a long period after ligature of the artery.

First, what would be the signs of this rupture of the sac having occurred? Generally, a subcutaneous rupture of the sac of an aneurism is told by diminished pulsation at the sac and a sudden outrush of blood from it; so that there is a rapid increase of the swelling and great pain, and not unfrequently great swelling of the whole limb, the blood infiltrating through all the adjacent soft textures, just as it might after rupture of an artery by external violence. These are the typical cases of rupture of an aneurismal sac. But there are many cases which fall short of this wide rupture, and in which, by a sort of leakage,—for I know no better word to use,—a little blood is shed now and then in the tissues in the neighborhood of the aneurismal sac. In these cases you have to judge of the occurrence of rupture by the fact that the swelling increases, though slowly, yet more rapidly than it would by the mere dilatation of the sac; and increases, commonly, without any accession of great pain, and usually takes the shape of the parts about the sac, rather than maintain the shape of the sac itself. Instead of continuing globular, or oval, or lobed, after the fashion of aneurisms or aneurismal dilatations of arteries, the sac and the blood exuding from it take the shape of the adjacent part of the limb, becoming flattened under fasciæ, or rounded in adaptation to this or that muscle. In any such case you may suspect this slight rupture and leaking of the aneurism, especially if at the same time the pulsation that may have been felt at the sac becomes less. All these signs you may remember were observed in the patient on whom I tied the external iliac artery two months ago. In the clinical lecture on his case, I pointed out how the diagnosis of aneurism was in him obscured by changes which were, probably, consequent on the effusion of some blood into the textures round the sac. And the manner of his recovery from the operation agreed with the supposition; for the swelling only very slowly diminished after the ligature.

But you may ask, Why should this rupture of the sac take place after the ligature of the artery? There are two chief reasons, both of which were involved in this case: first, the increasing degeneracy of the walls of the sac, consequent on the ligature of the artery; and then the proximity of pus to the sac.

First, this increased dengeneracy of the walls of the sac. When the main artery of a limb is tied, and the circulation suddenly arrested, there is a sudden diminution in the nutrition of the whole limb, and, among the parts of the limb, in the walls of the aneurismal sac. Now, this sudden diminution in the nutrition of a limb consequent on the ligature of an artery is of no great moment in healthy persons, in the young, and in those in whom all the tissues of the limb are sound. But it is of very great importance in opposite conditions to these. In the best cases you will see us take care that no ill consequences ensue from this arrest of nutrition; and the limb is kept warm and at rest, and carefully covered to prevent anything like accident aggravating its defective nutrition. But in the old, and in those whose limbs are inflamed or œdematous, it is by no means rare to find that the ligature of a wounded artery is followed by more or less gangrene of the limb. It is no very rare accident, after secondary hæmorrhage and the ligature of the main artery, that the limb below, being the seat of inflammation or œdema, and already very defective in its nutrition, suffers gangrene,—dies. That which in such a case occurs in an extreme degree occurs in a less degree in every case in which the main artery of a limb is tied. There is for a time a defective nutrition of every part which that artery supplies. In parts that are very delicately nourished, if I may use such an expression, such as the brain, this defective nutrition is much more important than in the limbs. The ligature of the carotid artery for aneurism of its upper part is fatal more often, I suppose, from what is called yellow softening of the corresponding substance of the brain than through any other consequences. This softening of the substance of the brain is, in fact, a gangrene of that part of the brain. The nutrition of the brain must be accomplished by singularly delicately adjusted systems and pressures of blood, and those failing by the ligature of the carotid artery, the brain decays or suffers gangrene much more readily than any of the coarser textures of a limb would. Now, the sac of an aneurism is doubtless a part ill-nourished; for aneurisms do not form in healthy arteries. They may form, it is true, after wounds of arteries; but independently of wounds, the existence of an aneurism shows for certain that the part of the artery at which it formed was either diseased or degenerated. An aneurismal sac, therefore, is always a part in which there is risk in cutting off the supply of blood on which it depended. This, doubtless, is one reason why it is not rare for an aneurismal sac to fail altogether of its nutrition, to rupture, or to inflame and ulcerate, after ligature of its main artery.

I suppose I may add, though I have no facts to prove it, that this is more likely to happen in the case of those aneurisms which are thickly lined with clots of blood; for when an aneurism is merely a dilatation of an artery, and has good arterial blood in contact with all its internal surface, it may nourish itself from that arterial blood. The arteries in a state of health are doubtless nourished in their internal layers by the blood that traverses them, not by the blood that is given to them by their *vasa vasorum*. So with an aneurismal sac. If it is filled with good sound arterial blood, it may nourish itself from that; but if, next to the lining of the aneurismal sac, there be layer upon layer of old clot of blood, this can yield it no materials for its nutrition. Therefore, I apprehend, sacs that contain many clots are more likely to rupture after the ligature of the arteries than sacs which are mere dilatations of arteries. So also it would follow that the rupture of a sac after ligature of the artery may be more likely to ensue while it is in process of cure, than immediately after the obstruction of its blood by the ligature; because, in process of cure, clot forms within the aneurismal sac, and its walls are shut off from that supply of arterial blood in its cavity which would have tended to keep up their nourishment.

In this case there was another risk of this rupture of the aneurismal sac; the risk at which I hinted when I said that I believed that the accumulation of inflammatory products at the bottom of the wound, because of the closure of its orifice, was the beginning of all the mischief. I have said that in the progress of this case we observed from time to time that pressure deep about the wound brought welling up of pus, and that we might therefore conclude that the bottom of the wound was less closed than its more external parts, and was, in fact, in the position of an abscess, open, but accumulating pus, which was discharged with difficulty. There was, therefore, what was equivalent to an abscess lying close by the aneurismal sac. Remember that this aneurismal sac extended for half an inch, or somewhat more, above the crural arch. The artery was tied somewhere in the middle part of its course, and the wound made for the ligature of the artery had extended, therefore within half an inch of the uppermost part of the aneurismal sac. Then, when the deeper part of the wound suppurated, the pus must have been lying within half an inch, or probably within a quarter of an inch, of the walls of the aneurismal sac.

It was a famous observation of Mr. Syme's, that there is very little risk of an artery opening into an abscess so long as the abscess is closed; but that when an abscess has been opened, then comes the risk that an artery adjacent to the abscess may open into it. Mr. Syme laid down that rule, and it is one of first-rate importance in the management of abscesses near arteries. There is little or no risk of an artery opening into an abscess so long as the abscess, however near to the artery, is not open; but when an abscess has been opened, and is still discharging pus, and I suppose I may add, that when the discharge of pus is not very free, there comes the risk that the artery will open into the abscess. This is not peculiar to arteries. There is little risk of a urethra opening into an abscess, so long as the abscess is not open; but when an abscess bursts into the perineum and is discharging, then, after a few days, it is very common for the urethra to open into the abscess. Again, it is not, on the whole, a very rare thing for a rectum to ulcerate, and open into an abscess near its walls while the abscess is still closed; but it is much more common, after the abscess has been laid open, and is discharging, for the rectum to open into it, and for a fistula, which is incomplete, by this process to become complete.

There is a striking specimen in the museum which illustrates the tendency of arteries to open into abscesses which are discharging. There was a lad under medical treatment for deep-seated scrofulous abscesses in the neck, and the abscesses were so nearly healed that the lad was leaving the hospital; but one day there came a profuse hæmorrhage from one of his abscesses, and he died. That hæmorrhage was from the arch of the aorta, in contact with which these abscesses had lain suppurating for several days, it may be weeks, and at last, when the discharge from the abscess had nearly ceased, but some pus remained, as it were, in a well near the aorta, the aorta ulcerated, and the lad died through hæmorrhage into his abscess. Another case that I saw bears upon the point how, not arteries alone, but even veins have the same tendency. A child had scarlet fever, which was followed by a large abscess in the cervical glands. No harm happened till a day or two after one of these abscesses was opened, and then there came a great hæmorrhage. I was called to the case, and I found that the hæmorrhage proceeded from the internal jugular vein, which seemed to be in no risk of ulcerating into the abscess while the abscess was closed, but ulcerated into it in a few days after the abscess had been opened.

Reverting, then, to this case of iliac aneurism: the aneurismal sac was in the position of an artery close by an abscess,—an abscess which was not freely discharging through the external wound. There happened to this aneurismal sac what might have happened to a healthy artery, but what was very much more likely to happen to the aneurismal sac than to the artery: it ulcerated into the open suppurating cavity. The chance of such an event may be used for enforcing the rule, that when an artery is to be tied in the ordinary way for aneurism, the ligature should be put as far from the sac as is consistent with other conditions of safety. But leaving this, let me observe again upon that manner of occasional blood-staining of the pus. I told you what it always portends —a risk of larger hæmorrhage. The larger hæmorrhage came, and again and again. This is not peculiar to aneurisms that are ulcerating into the cavity of abscesses, or into open wounds. Whenever an aneurism ulcerates or bursts upon a soft mucous or granulating surface, it is likely to bleed repeatedly before it bleeds very largely. So, for example, in cases of aneurism of the aorta, when it bursts into the trachea there is, often, not one great rush of blood and death, but the patient observes that he is subject to slight attacks of hæmoptysis, and bleeds now and then. Every three or four days, it may be, there is a little flow of blood; and at last there may come a great rush. So with aneurisms that open into the stomach or the intestinal canal: the final hæmorrhage is very often preceded by hæmorrhage of much smaller amount. It seems as if the soft, elastic, and yielding parts of mucous membranes or granulations would let a little blood through and then collapse; or the small orifice heals for a few days, and then again gives way, until at last we get a final fatal hæmorrhage.

Those, I think, are the main points which this case will serve to illustrate. On a survey of the whole case, it may seem to some of you to justify the treatment of aneurism by pressure rather than by the ligature of arteries. Doubtless, such a case as this would be counted to the discredit of ligature, and to the glory of pressure, as a means of treating aneurisms. As between those who practise these two methods, I can as yet hold only a suspended, undecided judgment; but with the belief that, with further study, what we shall arrive at will be the power of assigning the right cases for each mode of treatment. As yet, I believe, we are not in a position to say that either mode of treatment should be adopted to the exclusion of the other. The arguments for pressure are very often strengthened, as its advocates suppose, by the adducing of certain accidentally fortunate cases; in which, for example, after the compression of an artery for a few hours, an aneurism of considerable size has been cured. But I am nearly certain that what is told to the credit of pressure in these happy cases might be balanced by an account to its discredit of the number of corresponding unhappy cases in which the pressure, failing of its result, has put the patient into a worse condition for the ligature than he would have been in if no pressure had been used. My own experience of pressure, as a means of treating aneurisms, has had some good results; but they were all tedious and troublesome cases, requiring very long-continued and painful pressure before the cure was perfected. There was one case among them, however, of very good success,—a case of aneurism of the carotid artery, in a gentleman past sixty, who, I think, would certainly have died after ligature, but in whom digital pressure maintained for some few days completed the cure of the aneurism; a cure complete to this time, after an interval of nearly two years from the employment of the pressure. But the cases of success that I have had are, in my own mind, balanced by the cases in which I have found myself hindered in the subsequent ligature by the failure of the pressure. I suppose I may say that this is the general feeling which my colleagues have; for in three cases which have been under observation, as you will have seen, in our Thursday consultations, a large majority of the voices has been for ligature rather than for pressure.

Taking large numbers of cases of aneurisms together, they are very nearly balanced, on the one side for pressure, and on the other for ligature. In favor of pressure there is the experience of the surgeons in Dublin. They seem to have a much larger number of aneurisms, especially of aneurisms of the popliteal artery, to treat than we have in England, and they have certainly a large amount of success. I have no doubt this is in part due to a well-arranged system, and to the house-surgeons and dressers acquiring a more special skill than we have yet achieved. On the other hand there is the remarkable success attained by surgeons who have constantly practised, with great skill, the ligature. The success of Mr. Syme in the ligature of the femoral artery for popliteal aneurism has been so great that any-one who might fairly expect to attain nearly the same measure of skill would undoubtedly follow the ligature rather than the pressure. I would prefer, however, to leave the subject open for your own observation, and say, endeavor to ascertain, as far as you may be able, which are the cases for the ligature and which are those in which pressure is more likely to lead to a good result. And in many cases in respect of which you are doubtful, pressure may be tried first and the ligature afterwards.

Once more: this case may be counted as one of those which will go to the credit of Mr. Syme's method of treating aneurisms; and to the rule that, in cases which do not plainly admit of ligature at a distance from the aneurism, a good course of proceeding is to lay the aneurismal sac widely open, and to tie the artery above and below it. This is, in fact, the proceeding to which I was obliged to resort at last,—laying open the aneurismal sac and tying the artery below it, the artery above it having been already secured. I do not doubt that, as we go on observing cases, this method of treatment will be found more and more widely applicable. There is nothing against it, speaking generally, except the fact that you may have to face a large amount of bleeding, which must be very quickly restrained; but the invention of the abdominal tourniquet by Mr. Lister has very greatly diminished the risk which would ensue of hæmorrhage from any artery of the lower extremity. With the aid of this instrument, there is no doubt that very large aneurisms of the arteries of the lower extremity may be fairly laid open, and the points of bleeding may be distinctly seen and separately secured. This is the manner of proceeding which should be adopted in nearly all cases of ruptured arteries,—just as it is the method of proceeding for wounded arteries. I believe that at present it is well to make an exception in the case of ruptured aneurisms of the popliteal artery. The difficulty of getting at the popliteal artery, and more especially the difficulty of securing its lower end, if the aneurism has extended low down, near to the point of division of the popliteal artery, are so considerable that you might be foiled in that part of the operation. Therefore, for most cases of ruptured popliteal aneurism, it would be advisable either to tie the common femoral or to amputate.

Original Papers.

FURTHER CONTRIBUTIONS

TO THE

PATHOLOGY AND TREATMENT OF ANEURISMAL TUMORS OF THE NECK AND CHEST.*

By John Cockle, M.A., M.D.,
Physician to the Royal Free Hospital.

If we examine the hollow of the neck in a sufficiently large number of individuals of both sexes, we shall occasionally find, especially among women, instances where the innominate artery is readily seen, and felt pulsating along the lower and tracheal border of the right sterno-mastoid muscle, and traceable below the sterno-clavicular articulation. This peculiarity of the artery depends either upon its being longer than ordinary, or upon the sternum being shorter, with flattening of the upper portion of the chest, or even upon the aortic arch reaching somewhat higher. The artery may gradually become the seat of circumscribed dilatation, constituting the "cylindroid aneurism" of Breschet, now more commonly designated simply "arterial dilatation." Its more common occurrence in females may probably result from the greater delicacy of their structure, and their greater liability to vascular excitement. This dilatation has been well nigh mistaken for ordinary aneurism by men so experienced in the pathology of aneurismal disease as Dubreuil and Broca; and Dr. Hayden, of Dublin, has recently published a case in which so marked a state of erethism of this artery existed as to simulate for a time aneurismal impulse; nay, more than this, operations have even been performed under such a supposition. I am by no means sure that the second case detailed by a distinguished authority, the late Dr. Wardrop, in his work "On Aneurism," was not one of this description; one recorded by Porta, of Milan, most assuredly was, for death followed forty hours after the operation, and post-mortem examination revealed simple dilatation of the innominate artery and its terminal divisions. In another case, mentioned by Hope, the operation of tying the carotid was recommended; but, on post-mortem examination, it was found to be one of simple dilatation of the aorta and innominate artery. These examples may suffice to show the importance of a sound discrimination of this class of cases. So far as I have observed, they will be found generally associated with a greater or less degree of dilatation of the ascending aorta and its arch. Some amount of dulness over the course of the vessel is occasionally met with, and always a double murmur of greater or less intensity along the vessel, and most marked above the aortic valves. Collapse of the vessels is sometimes seen (not from incompetence of the valves, though eventually, from the progress of disease, secondary insufficiency may occur), but it results from the loss of resiliency of the aorta, and the regurgitation of blood in the vessels springing from the arch to obviate the tendency to vacuum. This dilatation and loss of elasticity of the aorta, without any necessary valvular incompetence, may be at times attended with severe and even dangerous symptoms. This latter point is briefly referred to as worthy our serious consideration, and not as possessing any degree of novelty. It is a condition with which the cardiac pathologists of the last century were familiar, and in our own time has been specially referred to by Dubreuil and the late Dr. Bellingham, of Dublin.

---

* Read before the Medical Society of London.

From time to time a few cases of this form of disease have been published by me, and quite lately another case has come under my notice, which I shall briefly relate.

Mary P——, aged forty-eight, married, and mother of a large family, was admitted under my care at the Royal Free Hospital, on September 29th, 1868. With the exception of occasional attacks resembling those of rheumatic gout (to which complaint she inherits a disposition), she had tolerably good health up to the period of the complaint she now suffers from. The only commemoratives of importance are the sudden death of both mother and grandfather from disease of the heart. About six or seven years ago she first felt a sensation of throbbing in the hollow of the throat, and shortly after a swelling arose, which has remained up to the present time without any very decided increase.

A pulsating tumor now occupies the episternal hollow, and is traceable downwards behind the right sterno-clavicular articulation; it also ascends the neck in a slightly oblique direction behind the inner head of the right sterno-mastoid muscle, the tendon of which bisects the tumor, giving somewhat the appearance of a double sac, the outer portion of which extends to the clavicular attachment of the muscle. During arterial diastole the tumor (about the size of a pullet's egg) is circumscribed, prominent, tense, with very expansive and liquid impulse, but without any marked fremitus; during arterial systole, there is perfect collapse. A double murmur, of soft character, is audible over the tumor, but of greatest intensity under the sterno-clavicular junction; it occasionally ascends faintly the vessels of the neck. Below the maximum site, the double murmur is audible down the aorta, at the apex of the heart, and in the left axillary region. The apex of the heart, however, is not lowered, nor apparently does any marked hypertrophy of the left chamber exist. No great amount of collapse of the vessels is observed. The superficial mammary veins clearly are more prominent upon the left superior portion of the chest. The right is invariably stronger than the left radial pulse; pressure either upon the right carotid or subclavian arteries has no effect upon the tumor. The right pupil is, for the most part, considerably larger than the left, but occasionally both are of equal size.

The symptoms complained of are somewhat variable, but in the main unchanged: sense of weight and throbbing in the hollow of the throat; frequent pain at the upper part of the chest, and in the right shoulder; transient giddiness and dimness of vision; hoarse, barking cough whenever cold is taken; and some embarrassment of breathing, especially upon exertion, or ascending stairs.

Prognosis.—My experience does not enable me to state with the necessary precision what may be the eventual destiny of such cases of arterial dilatation. I can only say that I have watched one or two for years without perceiving them to undergo any great amount of change; and in this particular their history signally differs from that of ordinary aneurism. Still it is not unreasonable to suppose that under such dilatation the arterial coats may gradually undergo such transitional changes as eventually to lead to the more ordinary form of mixed aneurism; and such contingency may justify a few remarks upon the differential diagnosis of aneurisms occupying the root of the neck, in their earliest phase.

Assuming for the moment the integrity of the aorta,—should an aneurismal tumor involve the distal end of the innominate artery, generally speaking, it first emerges from behind the right sterno-clavicular articulation (which it may displace), distends the episternal hollow, and passes behind the sternal portion of the sterno-cleido-mastoid muscle; and from these points it may ascend the neck, to spread in various directions. Moderate percussion dulness will be found corresponding to the articulation; and here a shock or murmur, single or double, is ordinarily heard, of maximum intensity, which may ascend the terminal vessels if pervious, but weakening below, and altogether diffused and lost about the arch of the aorta. The condition of the carotid and radial pulse is, at times, greatly modified, being either much weakened or quite suppressed in one or other vessel; but this of course must quite depend upon the amount and position of the clot within the sac, and upon the extent of pressure exercised by the latter upon the terminal branches. Severe neuralgic pain of the right side of the head, neck, and arm, is almost invariably present, and a marked amount of venous turgescence and œdema.

Oppolzer, in his lectures recently edited by Stradella, attaches very great importance to a retardation of the carotid and radial pulses upon the right, as compared with those of the left side; and to a distension of the left jugular veins, and those of the arm, as very characteristic of innominate aneurism. The signs referred to by this distinguished physician would be of the utmost value, provided we could eliminate aortic complication —a not unfrequent cause of the phenoemna; but since the lower portion of the innominate artery is included in his description, and as under such circumstances an accurate diagnosis is impossible, I hesitate to admit their value. Nor do I think the differential point indicated by Gendrin,—viz., a double concussion-sound in innominate, and a single concussion-sound in carotid or subclavian aneurism, reliable; a sac upon any large artery, permeable, and partly filled with fluid blood, may engender double concussion-sound.

The ordinary situation of aneurism of the distal end of the artery has been alone referred to; but it is true that some exceptional cases have occurred in which a pulsating tumor first appeared near the acromial end of the clavicle. But here the disease commenced at the cardiac end of the vessel, was generally loculated, and involved the aortic arch to a greater or less extent.

Carotid aneurism perhaps most frequently occurs near the point of bifurcation of the artery, and here of course no difficulty occurs in diagnosis; but there are several recorded cases in which the origin of the vessel was the part engaged, and now embarrassment begins. In such a case, however, the sac generally ascends the neck and side of the trachea in the direction of the current, so that its long diameter is vertical. I can find no instance in which carotid aneurism distended the episternal hollow, and, unless I am in error, this fact would constitute a capital point in diagnosis. The state of the circulation, again, would now furnish evidence of the highest value. If the carotid pulse, at a higher point than the tumor, were weakened or suppressed, with a more or less disturbed state of the cerebral functions, while the right radial pulse remained unchanged, such signs would afford presumptive proof of the malady in question. We must not, however, lose sight of the possibility of the radial pulse being modified, even in this form of carotid aneurism, from direct pressure of the sac upon the subclavian artery.

Aneurism of the subclavian artery outside the scaleni, in its early stage, could hardly be confounded with any other form of external aneurism. The position of the sac, its shape, its long diameter transverse, the state of the radial pulse, the pain and œdema of the arm, would be distinctive. In a later stage the sac might even wear itself into the chest, and become imbedded in the upper portion of the lung, but would hardly cross to the tracheal border. Subclavian aneurism limited to the intra-scalenal portion of the artery, if it ever occur, must be of extraordinary rarity; and, as it might pass through the scaleni, ascend the neck, or pass into the chest, and affect the circulation both of the carotid and innominate arteries, would be impossible to reach by diagnosis. With regard to the value of the sphygmograph in this class of aneurisms, I would defer to the opinion of Dr. Anstie, who, as is well known, is a master in the use of this instrument. He has been good enough to examine all my cases, and will state how far its use may subserve the purposes of diagnosis.

It is, however, of very little practical importance, so far as the available resources of art are concerned, whether an aneurism involve the upper portion of the innominate, root of the carotid, or subclavian arteries; but it is of importance in a prognostic point of view, inasmuch as an aneurism limited to the root of the carotid is much more likely to be benefited by these resources.

In all such aneurisms, both medical and surgical measures essentially aim at lessening the impetus of the bloodwave passing through the diseased structure, either by slackening the general circulation by some modification of Valsalva's method, or, by an agency acting between the sac and the capillaries, and this with or without a solution of continuity of the parts,—pressure or ligature.

I do not dwell upon the process of malaxation of Sir W. Fergusson, or upon the reputed efficacy of certain drugs, as iodide of potash: of the first I have no experience to offer; of the second I *can* say that its alleged power has yet to be more satisfactorily demonstrated.

In Brasdor's method of treating these aneurisms, there is nothing theoretically wanting to prevent success; but practically it is most hazardous at times to carry the knife where the method is to be adopted in all its purity; and almost equally hazardous, in Wardrop's modification, to leave open vessels so near the sac. Still, we must bear in mind that these operations are never matters of choice, but imposed on us by the necessities of the case.

But of *three* conditions we have to consider, and which must be satisfied before any aneurism can undergo a process of cure, this slackening of the current, however effected, is the only one over which we have any immediate medical or surgical control. How important is our power in this particular may be best estimated by studying the natural process of repair. It is the incontestable merit of the late Mr. Hodgson that he was among the very first to recognize the importance of this means. His work ought still to be our text-book, for it is the most practical up to the present day, inclusive. Very few amendments, in a pathological sense, would be required, and these of minor importance, such as the nature of cysto-genetic aneurism, and the inculcation of the almost absolute necessity for the formation of a pure fibrinous coagulum. Although we have since learnt that an ordinary coagulum (the passive clot of Broca) may undergo stratification, still it is clear that such a process is often an unmitigated evil. The clot may, and often does, re-dissolve, and débris pass into the general circulation,—at the least losing all value as a hæmostatic barrier; or it may, if large, act as a direct irritant, and induce both inflammation and suppuration within the sac.

The second condition demands that the blood should possess a given constitution: and this, if originally defective (so far as we at present know), either chemically or clinically, can be but very imperfectly corrected. This aplastic quality of the blood, if we investigate the cause of death in many cases, will be found to have been, apparently, the sole impediment to cure.

The third requirement consists in a certain physical peculiarity and arrangement, so far as relates to the state of the orifice of the sac and the condition of its inner walls. If the mouth of the sac be wide, as in the crateriform aneurism, and the walls comparatively smooth, the formation of coagulum is much impeded; but if the neck be narrow, and the walls roughened by calcareous or atheromatous deposit, it constitutes a veritable straining chamber; and then, the other conditions being present, the plasmine divides, allowing fibrin to settle, molecule by molecule, with that singular mode of adhesion and formation of laminæ—the most internal hyaline, the external still fibrillary—so well investigated and described by Robin in his "Lectures on the Normal and Morbid Fluids of the Body" (p. 161).

With respect to our treatment of these cases, I think we ought, from the very first, to enforce, with severity and persistence, a modification of Valsalva's method: by this is meant the most perfect rest, the restricted use of fluids, the occasional exhibition of saline aperients, the guarded use of digitalis and iron, iodine, and the local application of ice where it can be borne; and we should additionally employ pressure, indirect, intermittent, or alternating and partial, either digitally or instrumentally. While adopting these measures, we should, *daily*, most carefully examine the condition of the sac; if the general expansion become less marked, and the impulse decidedly less liquid, we should be content with their continuance, as placing the patient in the best condition for what does (and not very unfrequently) happen,—a natural arrest of the disease. Should such measures clearly fail, we have no alternative left but to employ the knife. I would advise that the carotid artery be first tied; here the anatomical relations are most favorable, no collateral branch directly intervening; but here, for a time, we should stop. Few surgeons would now venture to tie the subclavian artery *within* the scaleni, and it is with me a doubt (though possibly an unreasonable one) whether better results would follow ligature *without* the scaleni than those from partial and indirect pressure. If the artery is tied, and the collateral branches remain pervious, by a natural law they actively enlarge, and might soon permit the passage of such a current as entirely to disturb the repose essential to the formation of fibrinous coagulum, and undo all the good at first obtained. Indeed the operation is tolerably parallel with that at the groin, which we all know is notoriously unsuccessful. I am, however, very far from asserting that the vessel should not be tied as the last resource.

Thus far these aneurisms have been simply considered as existing *per se*, but the coexistence of disease of some portion of the aortic arch in nearly all is, I fancy, rather the rule than the exception; and I am now anxious to put a question over which I have long thought—namely, whether such complication should in any way restrict our measures, or prevent our carrying out, with premeditation, that which we have hitherto done in ignorance of the precise nature of the affection. Let us first interrogate the facts, and see whether they are of sufficient number and importance to warrant the attempt to generalize and use them. They have been commented on again and again, regarded as singular, but still left without any application.

The first case, and certainly one of the most interesting of the series, is recorded by Haller in his "Opuscula Pathologica" (p. 40), an engraving being attached to show the morbid appearances. The body of a woman about fifty years of age was brought for dissection into the anatomical theatre. The ascending aorta was found dilated, and the entire arch converted into a large sac. Beyond, the vessel was normal. Upon opening it, some recently coagulated blood occupied its centre, but the sac itself was densely filled with firm, white, laminated tissue resembling membrane; the innermost layer, six lines in thickness, adhered so firmly to the lining membrane that it might have been mistaken for part of the arterial coat. The same dense membrane extended continuously up the trunk of the left common carotid artery, completely obliterating it, and so firmly adherent as to be with difficulty detached by dissection: it also passed up the external carotid to the commencement of the labial artery. The internal carotid artery, smaller and contracted, was also filled by an extension of the membrane as far as the foramen of the petrous portion of the temporal bone. The right carotid artery and jugular were pervious, but a considerable extent of the left jugular vein was entirely plugged with the same substance.

The second case is from Pelletan, whose experience in aortic aneurism was very considerable. A physician of the Faculty had an aneurismal tumor, of the form and size of the smaller half of a hen's egg, situated above and behind the right clavicle, near the sterno-clavicular articulation; the impulse was enormous, and was supposed to be connected with the arch of the aorta. Pain, regarded as rheumatic, preceded the appearance of the swelling. Valsalva's method, and the application of ice, greatly reduced the size of the swelling, and abated the pain; but the patient refused to continue the treatment, and, some months later, died from pain and impeded respiration. The external tumor had increased by one-half. On dissection, the sac was found to arise from the summit of the arch involving the innominate and right carotid arteries. Pelletan adds,—"I know not why this situation of an aneurism appears to me more favorable to cure than any other; possibly the obliteration of the carotid might, by forming a cul de sac, have checked the progress of the aneurism."

The next two cases are quoted by Velpeau. A man was admitted into the hospital at Amsterdam with an aneurismal tumor extending above the sternum. Tillanus, supposing the case to be one of aneurism of the left carotid, tied this artery a little higher up. The patient recovered. Five months subsequently he died suddenly. The aneurism occupied the arch of the aorta, and was completely filled with fibrinous clot. The specimen is still in the anatomical museum. In the second case, the aneurism occupied a similar position, and was on the point of bursting. Taking the case to be one of aneurism of the left carotid, Rigen, of Amsterdam, tied the artery a few inches higher up, on the 21st of February, 1829. All the more serious symptoms disappeared, and the size of the tumor considerably diminished. It was necessary to operate for strangulated hernia on this man on the 9th of May following, but on the 13th of the month he died, with symptoms resembling those of asthma. Post-mortem examination showed the sac to occupy the arch of the aorta between the innominate and left carotid arteries. It was filled with solid, fibrinous clot, and very considerably diminished in size.

The following case occurred in a patient under the care of Mr. Montgomery, of the Mauritius. A negro, about forty years of age, was admitted into hospital on Feb. 20th, 1829, for an aneurismal tumor the size of a pullet's egg, situated immediately above the sternal end of the left clavicle, and so close to that bone that it seemed to emerge from behind it, or rather from within the cavity of the chest. The tumor rapidly increased until the 9th March, when it had acquired an alarming size, the base occupying the space of two-thirds of the sternal end of the clavicle, and ascending nearly four inches upwards to the angle of the jaw. Under the impression that it was a case of aneurism of the left carotid artery, Mr. Montgomery tied the vessel above the sac, as recommended by Mr. Wardrop; and the tumor rapidly diminished in size. The patient died on July 11th. It was found on post-mortem examination that a mistake in diagnosis had been made. An aneurism, the size of an orange, occupied the arch of the aorta between the innominate and left carotid arteries. The orifice of the sac was firmly closed by organized coagulable lymph, which completely prevented any blood passing from the aorta to the sac; the left carotid was plugged by the same matter, and the right carotid much enlarged. Unluckily, inflammation and suppuration had occurred at the upper part of the sac, and ultimately extended to the pericardium.

The last case I shall cite is extracted from Robert's essay "On Aneurisms of the Subclavian Region." A woman, sixty-three years of age, had a large aneurismal tumor occupying the site of the left sterno-clavicular articulation, and greatly embarrassing the breathing. Colson, of Noyon, diagnosed aneurism of the left carotid, and tied the artery above the sac; gradual diminution of size and pulsation of the tumor occurred, but these never completely disappeared. This patient recovered, and was alive some years after the operation. Now, I would say of this case, that there is no recorded evidence to show that it might not have been an aneurism of the aorta, especially when we find that an aortic sac so much more frequently ascends in the locality described.

Reference might also be made to the interesting cases of Dr. Davies and Mr. Maunder, but I will not trouble you with further citations. If those referred to do not establish my position, nothing further would enforce the argument.

Now, these results, so far as they go, cannot be said to contrast unfavorably when confronted with those obtained from operations for aneurisms of the innominate and root of the subclavian arteries; and I again ask whether in a case of aneurism of doubtful origin, or even with the conviction that the tumor springs from the upper wall of the aortic arch, we may not be justified in affording the patient a chance by the ligature of the common carotid artery? How such ligature acts—whether by causing some "diversion" difficult to explain, or by producing some further modification in the membrane of the already diseased sac, one or both,—the facts remain; and, although there may be risks,—risks of undue inflammation of the sac, of suppuration, of disintegration of the clot, of hæmorrhage, or even of cerebral disturbance,—we must not balance contingent against a certain peril, for risks like these pertain to every case we have considered. Again, it may be urged that rupture of the sac may occur, despite the operation. But this objection applies to every case we treat. It is one which we cannot forestall, and for which the ligature is in no sense responsible.

In desperate cases like these, a doubtful remedy is better than none; and, while painfully conscious of the doubt, for we never can very firmly rely upon any modification of Brasdor's method, the practical question for us to determine is, whether by the employment of such a measure we have an equally reasonable hope, if not of saving, at least of prolonging, the life of the patient, as we should have in cases free from the aortic complication.

ON THE

COMPARATIVE STRENGTH OF ARTERIES SECURED BY THE METHODS OF LIGATURE, ACUPRESSURE, AND TORSION.

By Alex. Ogston, M.D.,

Assistant Professor of Medical Jurisprudence to the University of Aberdeen, Joint Medical Officer of Health for Aberdeen, and Ophthalmic Surgeon to the Aberdeen Royal Infirmary.

In the contest still being carried on between the rival merits of ligature, acupressure, and torsion, experimentation on the dead body—a method which, it must be admitted, is capable of exercising at least some weight in the solution of the question—has not yet been brought so prominently forward as it deserves. Some points which the advocates of the different systems are seeking otherwise to demonstrate can be solved with great accuracy by means of experiment; and while the whole subject of the after results of operations where each system has been employed is capable of being worked out only by clinical observation, their absolute and relative values as means of arresting hæmorrhage can by experiment be determined with very great certainty. Thus all it is requisite to know about an artery which has been submitted to the action of one of these hæmostatics, on purpose to judge of its power of controlling bleeding, is to be made aware of how much internal pressure a vessel so secured is able to resist. It is true that we cannot compare with absolute correctness the amount of resistance obtained with the force of the blood which in the living subject has to be resisted: before this could be indisputably accomplished, the amount of internal pressure exercised, under normal and abnormal conditions, by the blood, would have to be determined. Although this has not yet been done, something like a general idea of the force usually resisted by the wall of vessels can be formed; and by comparing this with the resistance of the three forms of hæmostatics, and these again with each other, a fair appreciation of their absolute and relative values can be arrived at.

The other conditions necessary for accurate experimentation are certainly present. A ligature can be applied as perfectly to a vessel removed from the body as to a living one; torsion can be as efficiently performed on the one as on the other; and some at least of the forms of acupressure are equally applicable under both circumstances.

In submitting the following results of a series of experiments as to the relative amount of internal pressure in inches of mercury required to overcome the artificial closure of divided vessels by ligature, acupressure, and torsion, an apology for their present incompleteness is necessary. In undertaking them, it was at first proposed to institute about a hundred several experiments, one-third of which were intended to refer to ligature, one-third to acupressure, and the remaining third to torsion. As yet, however, the results of only thirty-four such experiments have been collected, various causes having combined to prevent their being carried out to the full extent. The uniformity, however, of the results obtained leaves little room for doubt as to the correctness of the conclusions arrived at.

Among the circumstances which render them imperfect, besides their limited number, is our present ignorance as to the amount of internal pressure which the blood, in normal and abnormal conditions, exercises upon the walls of the human arteries, and as to the power of resistance of healthy and diseased vessels. The want of accurate knowledge on these points is very unfortunate; for evidently we cannot be in a position to estimate by experiment the absolute or relative value of artificial means of closing wounded vessels, unless also aware of the amount of force with which the blood circulating in them tends usually to keep them patent. Thus, if the internal pressure on the walls of vessels is slight in degree, and if, even under unusual conditions, it is slight in comparison with the means we possess for resisting it, we are not justified in assuming that our frailest means of restraining arterial hæmorrhage may not be much more than sufficient to answer our purpose; since the force with which it is contending may be frailer still. It is by no means easy to fill up this important gap, for, to do this satisfactorily, it would be indispensable to have some experiments on arterial pressure which had been performed on the human subject. Of the existence of any such, I am ignorant.

On purpose to have something, which, however deficient, would be better than mere guesswork to go by, a series of experiments were instituted to ascertain what weight laid upon the radial arteries at the wrists, where they are covered only by skin and aponeurosis, would be sufficient to obliterate their calibre. A small button was made to press upon the vessel, and its pressure was indicated upon a steelyard; the amount of pressure at which the pulsations below ceased was carefully noted, and also the point at which they returned. The results of numerous experiments performed in this way did not always exactly correspond; but it was found that the artery was never controlled with less pressure than two pounds, and that it never required more than a pressure of eight pounds to ensure the cessation of the pulsations. So that the conclusion drawn was that a direct pressure of between two and eight pounds is what is usually necessary to obliterate an artery of the size of the radial at the wrist.

It would be difficult to say with what amount of internal pressure to the square inch this would correspond, the conditions of the experiment utterly forbidding any such calculation; but, perhaps, it would not be too bold an assertion to state that, at the very least, two to eight pounds to the sqare inch may be assumed as the pressure of the blood. Assuming this, then, as the usual pressure of the blood, a reliable mode of securing wounded vessels is one which invariably permits the arteries subjected to its operation to resist an internal pressure of at least two to eight pounds to the square inch, or a column of four to sixteen inches of mercury.

Before submitting any of the methods to the test of the direct experiment, it was endeavored to ascertain with the internal pressure of what number of inches of mercury the bursting point of healthy arteries corresponded. For this purpose it was desirable to obtain vessels which could be readily removed from the dead body without much close dissection, so as to allow of all their coats being invariably preserved intact, and which vessel should also have no branches. To this end selection was made of the common carotid arteries, which have very loose connexions and no branches, and which are removable without any trouble in the course of an ordinary post-mortem examination. For these, as well as for all the succeeding trials, the arteries were carefully removed, being cut through above their division into external and internal carotids, and at their proximal extremities as close as possible to the arteria innominata, or, on the left side, to the arch of the aorta. They were selected from fresh bodies,—always from those who had been less than forty-eight hours dead; they were rejected if they showed any signs of disease or atheromatous degeneration, and were without delay submitted to experiment.

The dynamometer used for estimating the height of the column of mercury consisted of a glass tube, bent near its lower extremity at right angles, the short limb being drawn out into a bulbous nozzle, of such size that it slipped readily into the interior of the vessel. The vessels were, in all the experiments, secured to this nozzle by being bound to it with thick soft silk, wound round them at first lightly, and afterwards more firmly, so as to press the artery against the sides of the tube without injury to the internal and middle coats. The upper limb of the dynamometer was graduated in inches, and the one at first used was capable of containing a perpendicular column of fifty-four and a half inches of mercury. With this it was found impossible to burst the coats of a healthy carotid artery, and the experiments were deferred until a longer tube, similar to the first, and capable of containing a perpendicular column of 114 inches of mercury, was procured. This second dynamometer had in its interior an iron wire slightly twisted into a spiral form, which broke the descent of the mercury poured in at the top, causing it to fall in a shower of minute drops on the column of the metal as it was ascending in the tube.

To the nozzle of this instrument one end of the vessel experimented on was secured as previously described, the free extremity, in the series of experiments undertaken to find the bursting point of arteries, being bound with similar silk, at first lightly, then more firmly wound round it, until the walls were pressed closely together, but without injury to the middle and internal coats, and until the end of the artery was enveloped in a ball of silk. The mercury was next poured gradually into the top of the tube, and its ascent watched on the graduated scale. Even with this height of column, however, it was found impossible to burst the walls of the arteries, as they resisted the pressure in every instance.

To avoid more waste of time in attempts to ascertain the bursting point, it was resolved to leave it undetermined, and to resume the attempts to find it, should it be necessary, in testing the resistance of vessels secured by ligature, acupressure, or torsion, to use a higher column than the 114 inches which the walls of healthy carotid arteries invariably resisted.

The next experiments were with torsion. One end of the artery being fixed on the instrument, the stem of the vessel was seized about two inches from the nozzle of the dynamometer, and being firmly fixed there by the hand or some properly protected instrument, the free extremity was next twisted off by a broad-pointed blunt forceps, like that used by Professor Syme in securing vessels. This twisting was continued until the end of the vessel came away of itself without pulling, to achieve which a considerable amount of twisting was required, and then the artery was left free, supported at the level of the lowest part of the perpendicular column, while the mercury was gradually added from the top, and the results recorded on the spot.

It was found that out of six vessels treated in this manner, no two gave exactly the same results. As soon as the mercury commenced to rise in the instrument, an untwisting motion commenced in the arteries, growing more and more evident as the column rose, until at length the jet of metal burst forth from the twisted end in a full stream, preceded by little or no oozing. In fact, it was plain that a small pressure indeed, if kept up, would in time have completely unclosed the artery, and that had the mercury not been too quickly added, the pressure sustained would have been lower than was recorded. Out of six experiments, one artery burst at 27 inches, one at 26 inches, one at 14 inches, one at 7 inches, one at 3 inches, and the other at 1·5 inch, giving an average of 13 inches of mercury as the resistance of a vessel secured by torsion. It will be perceived from these experiments that the average pressure sufficient to unclose the vessels—viz., 13 inches of mercury, or 6·5 pounds to the square inch, showed a resistance not equal to the 16 inches or 8 pounds assumed to be requisite, and that one of the vessels burst at 1·5 and another at 3 inches, a good deal lower than the extreme minimum of 4 inches. It would appear likely from this that vessels secured by torsion are very liable to secondary hæmorrhage, especially when the heart, recovering from the immediate shock of an operation, begins to beat more firmly, and to increase the arterial tension. Notwithstanding its advantages in leaving no foreign body in wounds, torsion seems as if it would be a dangerous hæmostatic. It is, however, open to experience to show the contrary.

In the vessels which have been subjected to torsion, the end removed, as well as the end left, was afterwards slit up, and carefully examined. It was found, as has been shown by others, that the calibre was closed by the intermixed ends of the fibres of the external coat forming a thimble-shaped termination enclosing the ragged ends of the middle and internal coats, which were irregularly folded back for the space of a quarter of an inch or so into the bore of the artery.

The next experiments were with acupressed vessels. The method of acupressure used was always the fourth method of Pirrie and Keith, where, the needle being passed behind the artery, a loop of wire is placed over its point, the two ends brought back over the vessel on the other side from the needle, and secured by being twisted round the eye-end of the needle. The other methods are inapplicable to experiments undertaken on vessels removed from the body; and this fourth method, besides, is described by Pirrie as being "no doubt the most secure."

In the very first trials it was found that when the arteries were acupressed with only sufficient firmness to bring their opposite walls into contact without cutting through the internal and middle coats, oozing from the secured ends occurred as soon as the perpendicular column of mercury began to rise, and before it had attained an elevation of a few inches; so that in all the experiments subsequently performed (and the results of these alone are preserved,) the wire was pulled so tight that the inner two coats were felt to give way,—a fact always verified by the subsequent examination.

Out of twenty-one such trials, the mercury was found to commence free oozing, or even to escape in strong jets, at 38, 41, 40, 43½, 28, 6, 16, 53, 16, 37, 40, 29½, 18½, 4½, 8, 6, 6, 24, 7, 20½, and 11 inches of mercurial pressure, or on an average at 23.5 inches. It is further noticeable that, of those twenty-one cases, nine gave way under 16 inches of pressure, the lowest being 4½ inches, none giving way under the assumed extreme minimum of 4 inches. Thus, if acupressure can be fairly judged from such experiments, it would seem a more reliable method of hæmostatics than torsion, but still not an absolutely certain means. At the same time, it is freely admitted that the observations of cases treated by acupressure in the Aberdeen Hospital would lead any impartial witness to believe it a most valuable plan in most cases, and where readily applicable. Its influence in producing primary union in wounds is undeniable; but in cases where primary adhesion could not be hoped for, its employment is uncalled for; and the superior results of ligatured vessels, when subjected to like experiments, show the superior safety of the old plan. One thing remains not quite clear, and that is, what becomes of the separated points of the internal and middle coats of the vessels, without which, unless a mass of tissue is included, acupressure by the fourth method cannot be efficiently performed?

The results of experiments on ligatured vessels require no long exposition. The ligatures were carefully applied, so as to cut through the internal and middle coats; and the vessels were, as in the other cases, carefully examined subsequently. In seven cases the pressure resisted was as much as the dynamometer allowed: the vessels refused to burst with 114 inches of mercury in every case except one, and in this the vessel gave way at 85½ inches of pressure, but not at the site of the ligature. A rent opened in its wall at a distance of one-third of an inch above the ligature; and when the vessel was removed and examined, an atheromatous patch, previously unobserved, was found at the site of the rupture. In one other case, a vessel which had been a good deal strained in fixing it upon the instrument, allowed a few beads of mercury to sweat through its walls at 70 inches of pressure, but bore, notwithstanding this, the full pressure of 114 inches, the escape of mercury ceasing as the column rose above 70 inches. These results are far above those of acupressure or torsion, and answer fully to the ideal resistance demanded.

If any conclusions can be founded on the above remarks, they are, that ligature is still our securest means of arresting hæmorrhage from wounded vessels; that the use of acupressure should be confined to those cases where its advantages are of use, as in wounds that may heal by first intention; and that prudence would forbid the application of torsion to large vessels, but allow its employment in small vessels, where the thickness and the capacity of contraction possessed by the muscular coat, as well as the amount of tissue included in the torsion forceps, favor its employment. It is possible that the use of Lister's antiseptic ligatures may combine the security of the ligature with the advantages of leaving no irritating body in the wound; but at present it seems as if it were the surgeon's wisdom to use the different means in the cases suitable for each, instead of aiming at the exclusive employment of any one method.

Aberdeen, March, 1867.

ON TORPOR OF THE COLON AS A COMPLICATION IN DYSPEPSIA.

By John C. Thorogood, M.D., Lond.

Senior Assistant-Physician to the Hospital for Diseases of the Chest, Victoria-Park.

It is not long since a very able and interesting paper appeared in The Lancet, from the pen of Dr. Julius Pollock, on Nervous Dyspepsia and its Treatment. The object of the present communication is to offer a few remarks on the nature and treatment of that inactive and torpid condition of the large intestine which is so often met with as a very troublesome aggravation and complication in cases of atonic and nervous dyspepsia.

Intestinal torpor, with constipation of the bowels, distension and hardness of the abdomen, gripy pains, and rolling about of flatus, with tendency to the formation of piles, in consequence of the obstructed portal circulation and abdominal plethora, are symptoms common enough in the dyspepsia of nervous and overworked persons. Atony of the colon is common, too, in the instances of those whose digestive organs are in an enfeebled state from advanced age.

The close sympathy existing between the digestive organs and the nervous system is markedly illustrated in these cases, especially when the colon has been irritated and exhausted by too frequent purgation; then it is that the patient becomes the prey of most abject hypochondriasis; he persists in physicing first with one drug and then another; and very often the more physic he takes the worse his case becomes.

It is not my purpose here to enter minutely on the subject of the sympathy of the bowels and the brain: that such sympathy exists is a fact well known to all; and it appears to be most highly brought out when the large intestine is the part of the canal chiefly affected.

It was noticed by Esquirol, and by others after him, that in numerous cases of melancholy monomania which were examined after death, the colon, instead of passing across the abdomen, as in health, descended perpendicularly behind the pubes. Those who have suffered from chronic dysentery and ulceration of the colon, or from gradually-forming stricture of the gut, are known to have been much afflicted by melancholia, though not necessarily to an insane degree.

The tendency of large accumulations in the colon to cause jaundice, with all its concomitant depression, is a point to be noticed again shortly.

In atonic dyspepsia, a constant complaint of the patient is that he has to be always taking aperients in some form or other; and experience soon teaches that the more of these he takes the more he wants; while the exhaustion of system, induced by a too free evacuation of the bowels, aggravates the dyspepsia, and causes us to lose any little ground we may have gained towards the cure of our patient's malady.

In treating the dyspepsia of those who work hard with their brains, and have but little tone about the stomach and bowels, I am convinced that the more we can refrain from administering purgatives the better. I used at one time to think that when the tongue was coated a purgative could not be amiss; but to whatever degree this rule may still hold among strong country people, or over-fed indolent townsfolk, it certainly does not do to act upon it always among those who work hard and eat moderately. In these cases a chalybeate mixture, or bark with an acid, I have observed to clean a tongue which got persistently worse while I obstinately adhered to alkalies and aperients. Had I done in these cases what ought always to be done before prescribing for a case of confirmed dyspepsia, that is, laid the patient down, and felt and percussed his abdomen, I might have seen my way more speedily to the administration of tonics.

By carefully percussing and palpating the abdomen, we can ascertain whether the colon be distended by fæcal accumulation or with gas; we may find it also rather tender, and we learn that the "pain in the stomach" which has long troubled the patient, and resisted a variety of medicines, is not in his stomach at all, but in his large bowel, and is probably caused by irritation of scybala there. To such irritation may sometimes, in old persons more especially, be attributed occasional attacks of bleeding from the rectum, which are apt to be at once set down as due to internal piles.

If the examination of the dyspeptic's abdomen discloses obvious collection of matters in his colon, these must be got rid of before we can hope to get the stomach and liver into good secreting order. I believe in most instances the best way to go to work to evacuate the contents of the bowel is by the administration of castor oil, in doses of one tablespoonful taken in peppermint water, with or without the addition of some of the compound tincture of rhubarb and compound tincture of lavender to disguise the nauseous taste of the oil. This dose, repeated first thing on one or two successive mornings, will gradually clear out the bowels without causing undue pain or exhaustion. If pain be much complained of, a pill containing a quarter of a grain of extract of belladonna may be given at night; for, independently of its anodyne powers, belladonna will act often as an efficacious aperient in cases of very obstinate constipation. If the patient, however, be pale, weak and wakeful during the night, then a quarter of a grain of extract of opium will be better than belladonna as a forerunner to the castor oil mixture of the morning. Avoiding anything like free purgation, we may promote the object of freeing the intestine of accumulation by giving twice daily a mixture containing half a drachm of sulphate of magnesia with one grain of sulphate of iron, or ten minims of tincture of iron, in a wineglassful of infusion of calumba or peppermint water. The persistent use of this form of saline aperient chalybeate greatly relieves venous congestion and plethora about the stomach and duodenum, promotes secretion generally throughout the intestinal canal, and so exercises what is known as a deobstruent effect. In such a mixture we try to imitate the well-known saline chalybeate waters met with at Harrowgate, Kissingen, and other places,—remedial agents of no ordinary power in the treatment of hypochondriasis and dyspepsia.

As soon as the abdomen loses its hardness and tension, and becomes soft, supple, and free from tenderness, we may consider that a great step is gained. The castor oil need no longer be administered, and the opium probably will before this have been withdrawn, for withdrawn it must be as soon as possible. The saline chalybeate may be continued; and, though it contains "salts" as an important ingredient, it is quite adverse to my own experience that it should be at all weakening. The addition of from five to ten minims of dilute sulphuric acid is an improvement, where the tongue is large, pale, and indented by the teeth at the edges.

It sometimes happens that, as the circulation, which has been long impeded and irregular, becomes more free and active, the patient, previously very prone to heavy unwholesome sleep, will complain of restlessness at night, and will ask for an opiate. It is rarely beneficial for him to have one, and he must for a time bear his sleeplessness, as probably it will soon give place to healthy rest when the circulation through the brain and system has become more settled. Recently, in the case of a man who may now be said to be cured of dyspepsia, constipation, and troublesome piles by such treatment as that above indicated, I have found a pill of oxide of zinc, and extract of hyoscyamus to suit well at night. I think it was the late Dr. Brinton who remarked that zinc and iron were two tonics that went well together, and my own experience has in several instances proved this to me; for I have long been in the habit of prescribing the saline chalybeate during the day and the zinc pill at night with the very best effect in restoring the tone and contractile power of the large intestine, so that the patients have believed that they have been taking at bedtime a mild aperient pill.

In the further management of the tendency to intestinal torpor, we must remember that the proper stimulus of the intestinal canal is aliment perfectly digested by the stomach. It is of no use for a dyspeptic, in his anxiety to avoid physic, to try to overcome the irregular and imperfect action of his intestines by adding to the already overburdened and weak stomach a quantity of vegetables, stewed fruits, and the like, for the purpose of any laxative effect such matters may possess; for, in the case of a weak stomach, these substances absorb the gastric juice, and prevent the due digestion of the more nutritious fleshy part of the food; they further tend to the production of flatulence and acidity, and so add to already existing evils both in stomach and bowels.

Practically, it will be found that a moderate meal of fish, with some light meat, and a very sparing allowance of vegetable and farinaceous food, will suit the subject of atonic dyspepsia much better than a large and bulky mass of any other form of aliment. Nothing is worse, in atonic dyspepsia, than overloading the stomach; and yet it unfortunately happens that, owing to this very condition of atony, the stomach will at the time receive a large amount of food before its owner feels satisfied. It is only an hour or two afterwards that his sensations make him conscious that his gastric organs have taken more work than they can manage.

One of the best promoters of a regular peristalsis of the large intestine is a healthy flow of bile; hence, exercise on horseback or on foot is so serviceable in these cases. Among medicines, we find often the purified ox-gall, given in pills of two or three grains, coated over with etherial solution of tolu to prevent its coming in contact with the stomach, most valuable; pancreatine, too, and pepsine wine, are remedies of the same class, all tending to promote a perfect and healthy state of the gastric and intestinal digestion. Among drugs, the nitro-muriatic acid, in doses of ten drops, given in plain water before food, is often very useful; and after meals, a pill of the saccharine carbonate of iron with half a grain to one grain of ipecacuanha powder, I have seen decidedly good in maintaining a healthy and regular action of the intestine. Tincture or extract of nux vomica, or the liquor strychniæ of the B. Ph., is often recommended in these cases. Strychnia in very small doses (one-fiftieth of a grain) I have found highly serviceable; the nux vomica, unless in very moderate doses, appears apt to impede the action of the liver in some individuals. Where there is much flatulence about the intestines, a five-grain powder of willow charcoal, to which some carbonate of iron may be added, is of well-known value.

I may mention the precipitated sulphur, so familiar as a remedy for piles, as very good, not only to relieve the piles, but also to promote a regular and steady action of the muscular coat of the bowel; indeed, it is, I believe, by its action on the contractile fibres of the muscular coat of the large intestine, thus relieving and regulating the venous circulation, that the sulphur exercises its well-known curative action over piles and irritable conditions of the rectum. Aperient pills containing crude powdered aloes have the very reverse effect: by their irritant action on the large intestine, they cause irregular spasmodic action of its muscular fibres; the circulation in the small vessels is thereby checked, and the distressing sensations of tenesmus and incipient piles are the result. Imperfectly digested alimentary matter in the bowel will have a similar action; and the weaker and more nervous the patient, the more marked will the evil effects be.

By careful attention to mastication and digestion of the food in the first instance, and by regular exercise, with the use of cold bathing, and sometimes a wet compress worn over the course of the colon, much may be done to restore tone and to obviate the need of aperients. If, however, these means are insufficient to rouse the bowel to a healthy action, then some of the medicines already named may be tried, or a pill may be given at night containing half a grain to a grain of the watery extract of aloes with extract of henbane, or else a little extract of belladonna. The belladonna often of itself will prove an efficient laxative in cases where pain, spasm, and irritability are prominent symptoms. Here, too, the pill of zinc and henbane finds a good opportunity. From ten to twenty grains of good precipitated sulphur taken in milk and water, with three or four drops of the liquor strychniæ or the tincture of nux vomica, first thing in the morning, I have found a valuable medicine in giving tone and regularity of action to the large intestine. Lastly, I should be sorry not to mention a very mild extract of aloes, made by Corbyn & Co., and known as the extractum aloes glaciale, which I have given as a gentle laxative in cases of uterine disease and piles, and have found the patients to speak highly of it.

In this paper, already I fear too long on so trite a subject, I have confined my remarks strictly to points falling within my own practical experience.

Wellbeck-street, W., March, 1869.

ON SOME OF THE FUNCTIONS OF THE MIDDLE AND INTERNAL EAR: AND THEIR ANALOGIES.

By Peter Allen, M.D., F.R.C.S., Edin.

(Continued from June No.—p. 302.)

The ossicles and their muscles.—The ossicula auditus, firmly articulated to each other, and forming an elastic and vibratile chain are not only most admirably adapted for transmitting the tremulous motions of the membrana tympani to the fluid of the labyrinth at the fenestra ovalis, but they also, by the influence of their muscles, place the drumhead itself in the most favorable condition to vibrate reciprocally to sounds having a great variety of fundamental tones. Moreover, as the finer, and I believe more numerous minute undulations, are transmitted through the air of the tympanic cavity to the delicate membrane of the fenestra rotunda, a similarly excellent provision exists for adapting this, the membrana secondaria, to receive and propagate them to the cochlear nerve. This is effected by the combined as well as independent actions of the tensor tympani and stapedius muscles.

The tensor tympani influences primarily and chiefly the drumhead by pulling inwards the handle of the malleus, and the membrane in which it is imbedded; and in the second (but not less important) place, it stretches the membrane of the round cochlear opening, by pressing the base of the stapes into the oval vestibular opening, and driving the liquor Cotunnii (or labyrinth fluid) through the scalæ, against the inner surface of the membrane, and causing it to bulge outwards. Thus both membranes have their tension increased when this muscle contracts; the larger (the membrana tympani) being acted upon directly, at the outer end of the ossicular chain, and the smaller (the membrana fenestræ rotundæ) more indirectly, through the column of fluid at the inner end of the chain. The latter membrane, notwithstanding its smaller size, is easily excited by even feeble sounds which have passed through the former, because the vibrations have become intensified by resonance in the tympanum. That vibrations are strengthened by resonance when confined in cavities of any kind is familiarly illustrated by the common speaking-tube. That this is the case with regard to the tympanum and its continuous tube, the osseous meatus, may be proved by closing the external passage with the fingers, when, if a tuning-fork be set vibrating on the head, or a humming sound or reading be continued, the sonorous undulations, conveyed through the cranial bones to the air cavities of the ear, will become considerably intensified. The same fact is demonstrated by placing a vibrating tuning-fork on the forehead or vertex, and stopping up one ear with the finger, when the sounds will be more audible on that side. Also, if these vibrations have died away when listened to through unclosed ears, they may be instantly restored for a short time by closing the ears. This experiment admits of a diagnostic as well as a pathological application. It is extremely useful in distinguishing affections of the conducting apparatus from those of the auditory nerve. For instance, if the patient be deaf to the sounds of a watch, a tuning-fork, etc., placed near his external meatus, and yet can hear their vibrations distinctly when conveyed to the labyrinth through the solid structures of the head, mouth, teeth, and the like, it may be inferred that the functions of the acoustic nerve are unimpaired, but that the passage of sound is obstructed in the tympanic cavity. Conversely, the surgeon may assume that the conducting apparatus is at fault if the vibrations of the tuning-fork and the patient's own voice are not heard better when the latter closes his ears; for it is shown by the above experiment that closure of the meatus amplifies all sounds transmitted through the skull or interior of the mouth. Obviously, disease of the tympanum, its contents, or external membrane, would hinder the escape of the intensified sounds outwards through the meatus, just as effectually as the stoppered fingers would do.

The Resonator of Helmholtz is a simply contrived instrument for augmenting weak sounds transmitted through the atmosphere. It consists of a partially closed cylindrical cavity, to which a flexible tube tipped with ivory is affixed, and applied to the ear. Any sound to which that cavity reciprocates will by the resonance of the contained air be intensified, and thus rendered more audible. The noise heard when a shell is held close to the external meatus is due to augmentation of the feeble sounds which pervade even the stillest air. The manner in which different tones generated by the vibration of the vocal cords are qualified and strengthened by the properly adjusted resonant cavity of the mouth has been before alluded to. I recall attention to this reinforcement and alteration of the sounds emitted by the elastic membranous bands of the larynx, which we well know are capable of various degrees of tension, because we can associate with them the phenomenon of what is termed "reciprocation of sounds," by the analogous membranes and cavities of the ear when subjected to like tension and adjustment by the tympanic muscles. It is probable that the membrana tympani is usually in a moderately relaxed condition, or scarcely on the stretch. Its fundamental note is therefore rather low, and reciprocates to ordinary conversational or somewhat grave tones. It has been conclusively proved by Fick, Ludwig, and others, that tension of the membrana tympani renders less audible all tones, and particularly the graver ones; while it does not at all assist our perception of those having a more rapid rate of vibration, and which are consequently of higher pitch. We know that the pitch of sound depends entirely upon the number of vibrations executed by a sounding body, and the more rapid the vibrations, the higher the pitch; while the slower they are, the graver the tone. Few persons are perhaps aware how much of their daily comfort depends upon the circumstance that the air communicates the successive vibrations of a disturbed body just as they are communicated to it, and passes on, as it were, at exactly equal intervals of time, all the impulses which are of exactly similar duration and intensity. "Could we, for example, see the air through which the sound of an agreeable voice is passing, we might see stamped upon that air the conditions of motion on which sweetness of voice depends: the spoken language which is to give us pleasure or pain, which is to rouse to anger or soothe us to peace, existing for a time between us and the speaker, as a purely mechanical condition of the intervening air."

If the smooth, perfectly periodic pulses of vibratory air be received upon the tympanic membranes and imparted to the auditory nerve with sufficient rapidity, they will appear continuous, and a *musical* sound will be produced. If the vibrations do not exceed 16 in a second, we are conscious only of separate shocks,—as, for instance, in the ticking of a watch or the puffs of a locomotive engine. If these could be quickened so as to number between 40 and 4000 (comprising seven octaves, the vibrations available in music), we should carry in our pockets a musical instrument, and "the approach of the engine would be heralded by an organ peal of tremendous power." Hence, almost every sounding body, from the periodicity of its vibrations, has the elements of music in it. If the impulses be not periodic, but irregular both in recurrence and intensity, a *noise* is produced, which in its effect upon the ear may not inaptly be compared to the unpleasant sensation of a flickering, vivid light upon the eye.

I have felt it needful to dwell for a moment upon these physical properties of sound, because in the experiments which have been instituted with a view of ascertaining the precise action of the membranes and the relative sound-conducting power of the parts within the tympanum, sufficient importance has not been attached to the fact that tension of the membrana tympani by its muscle produces simultaneously a corresponding tension of the membrana fenestræ rotundæ. By this movement, rapidly executed as already explained, both membranes present a convex tense surface to the tympanic cavity.

Professor Müller, who has confirmed another eminent physiologist (Dr. Wollaston) in his views, asks, "By which succession of media is the intensity of sonorous undulations least diminished; by air, a tense membrane (membrana tympani), an insulated and movable solid body (chain of ossicles), and water (labyrinth fluid); or by air, a tense membrane, air (of the tympanum), another tense membrane (of the fenestra rotunda), and then watery fluid?" He then asserts, as the result of his experiment on an imitated structure of the tympanum, that "the same vibrations of air act on the fluid of the labyrinth with much greater intensity through the medium of the chain of auditory bones and the fenestra ovalis than through the medium of the air of the tympanum and the membrane closing the fenestra rotunda." Müller and almost all succeeding writers on acoustic physiology are in favor of the transmission of sound by molecular or invisible vibrations of the particles of the ossicula auditûs, and not by the vibration of the membrane and bones as a whole. In this view I cannot possibly concur; and I shall endeavor, in a subsequent paper, to negative it by adducing evidence in support of the opinion that it is the bones vibrating as a whole chain at the same rate as the drumhead which communicate the larger aërial impulses to the labyrinth; and that the remainder, as well as the infinitessimally minute impulses which are to give us impressions of true melody or harmony, are transmitted by the air of the tympanum to the fibres of the cochlear nerve through the membrana fenestræ rotundæ.

But to return to the muscle of the malleus. Perhaps it is hardly necessary to repeat that this muscle receives its nervous supply from the otic ganglion. It has been stimulated to contraction by irritation of the trigeminus within the cranium of a vivisected dog by Politzer, and the effect made visible on the membrana tympani. The tensor tympani may be excited through reflex action, by either the expectation or the actual impression of a loud sound. It will, in conjunction with the ossicles, act as the analogue of the iris in the eye, by regulating the tension of the various structures thrown into vibration, and thus control the amount of sonorous undulations which pass to the labyrinth.

The functions of the other muscle of the ossicles (the stapedius), as well as the articulations and movements of the stapes, are so important, and may be so interesting to those who really desire to have placed before them some materials for forming more correct and decisive opinions than those to be met with in our standard physiological works, that the illustrated description, and consequent inquiry, must form the subject of another paper.

(To be concluded.)

ABSTRACT OF INAUGURAL LECTURE AT THE PARIS SCHOOL OF MEDICINE.

By M. Gubler,
Professor of Therapeutics.

Before commencing the strictly technical part of his course, M. Gubler wished to enter into a few generalities, touching the rise and progress of therapeutics, and his own views on this most difficult and obscure branch of medicine. First he dwelt upon the importance of therapeutics in the art of healing. In a professional school, natural philosophy, chemistry, natural history, physiology, and pathology were not cultivated for themselves, but in view of their practical applications; they were the foundations of science, of which therapeutics formed the crowning part. And yet it was most singular that man had commenced the building of the edifice at its summit. The apex of the pyramid had first been sketched; empiricism had preceded science. At a time when there were not the least notions of pathology, nor of the precise action of curative means, numerous remedies existed for the healing of wounds and the more apparent affections; so powerful was the feeling of self-preservation, so imperious the want, which led man to look around him for appropriate means of affording cure or relief. After having briefly referred to the scepticism and continual controversy which were attached to the medical art in general, the Professor proceeded to trace the rise and progress of that peculiar branch with which he was specially concerned. He showed how therapeutics, born of instinct and of accident, had undergone in its evolution all the vicissitudes of the human mind before being developed by a spirit of analogy and imitation, and rationalized in modern times. In the age of mythology it reflected the superstitious belief and practices of the time; it was a matter of sorcery, amulets, incantations, &c. Under the influence of natural phenomena, and of the human sentiments and passions, it became a medicine of centaurs and of matrons, in which a specific virtue was attached to each substance, just as a concrete existence was attributed to each disease. The emancipation of the science dated from the day when men, gifted with the spirit of observation, sought the reason of morbid phenomena in natural laws, and when a sort of rudimentary physiology seemed to afford the only possible explanation of the phenomena observed. But then arose the conflicting doctrines of the naturists, solidists, humorists, iatro-chemists, &c., so that therapeutics was made subservient to all these doctrines. It was always behind the other parts of science, so that Stahl at the sight of such a heap of errors and prejudices was led to exclaim that "a daring hand should undertake the cleaning of these stables of Augeas." The genius of Bichât had been tempted by such a task, but, unfortunately, he died too young. His ideas had, however, penetrated into the practice of his time, and inspired the treatises of Schwilgue, Barbier d'Amiens, and Alibert. The *specificité* of remedies began to disappear, and their physiological action to be recognized. Broussais next flourished: his physiological views might have exerted a most favorable influence; but exclusive doctrines on inflammation led him to condemn the greater part of materia medica, the action of which he supposed to be too incendiary. Materia medica fell into neglect. A reaction, however, took place. Broussais's doctrines on inflammation were swept away wholesale, and with them whatever was good touching the physiological action of remedies. The specificity of diseases and the specificity of medicaments were again upheld, and Laennec himself took part in this unfortunate movement. The Professor proceeded to say that it was just about this time that Trousseau and Pidoux's great work on therapeutics was published. He attached the greatest value to the doctrines and ideas which prevail in the book, and ascribed the most salutary effects to its influence. The brilliant teaching of Trousseau had also exerted a most beneficial action in correcting abuses, setting therapeutics upon its true scientific basis, divesting it of all the trash which had obstructed its course, &c. The improvements which had marked the gradual progress of therapeutics from the time when it consisted of staunching blood and applying balms, in employing frictions of crocodile fat in rheumatism, and in administering herbs and a few mineral substances, up to the present day, were next rapidly described. "Thanks to these combined causes," said the Professor, "therapeutics has now attained a degree of comparative perfection of which we would be tempted to be proud could we forget the grandeur of the task which yet remains to be accomplished, or entertain the slightest illusion with respect to the end we are seeking to reach, the difficulty of the route, and the imperfection of our means of investigation." According to M. Gubler, the end to be attained—the *ideal* of modern therapeutics—is to suppress the greater part of pathogenic causes by excellent hygiene, private and public; to avert the outbreak of more autonomic maladies by appropriate preventive medicine; to dissipate altogether pure functional disorders; to repair numerous anatomical injuries; and to cure the greater part of diathetic diseases, if not in the individual at least in the race. This could be attained only by the constant efforts of several generations of observers, provided with a good method, and directed by the principles of a wise philosophy. The lecturer wished to say a few words in connection with this fundamental question, and this formed the most original and interesting part of his discourse.

After having stated his views with regard to the action of medicaments, which was purely physiological, and not specific, which exerted a beneficial effect, not as the antagonist of a morbid entity, but by modifying the chemical composition, the structure, and the organic acts of the individual, &c., the lecturer said he would pass rapidly over the question of doctrine. This was of small importance. Between spiritualists and sensualists, materialists and animists, vitalists and organicians, the main point bore on the separation or the confusion of matter and of force. This involved problems which were beyond the reach of science. Whether force was independent of matter, or an attribute of matter, was a question of metaphysics with which science proper was scarcely concerned. For himself, he thought that the conception of *force attribute*, which led to that *organic vitalism* so brilliantly propounded by M. Pidoux, should be admitted for the time being, if only as an expedient.

With regard to the method of investigation,—a question of far greater importance than that of scientific principles,—he thought the only valuable one was the Baconian method, that of strict scientific observation and induction, which M. Chevreuil had termed the experimental method *a posteriori*; in other words, that positivist philosophy which had rallied all the scientific minds of the day. With regard to the best means of arriving at a knowledge of facts, there, however, existed much controversy. Two distinct camps had been formed; the one attached to ancient observation, the other upholding exclusively experimentation upon animals. Of course experimentation upon animals had produced invaluable conquests; but observation should not on this account be set aside as being henceforth useless or superfluous. This would be at once an act of injustice, of imprudence, and of folly: of injustice, because we owed to observation the best part of our knowledge; of imprudence, because we would be depriving ourselves of a most precious means of investigation, which science has placed within the reach of every one, whereas experimentation was the privilege of a few; lastly, of folly, because observation applied to experimental as well as to natural facts. The act of experimenting involved the same faculties and the same operations of the mind as observation; only experimentation was the more speedy process, and suited to the ardent impatience of our times. Each method had its advantages. If experimentation was the more speedy and the more striking process, destined to impress the mind more vividly, its inconveniences were numerous and undeniable. They attached to the experimenter himself, and to the experiment. They involved the illusions, the erroneous interpretations, the hasty conclusions and premature applications of the experimenter; the contradictory statements of different workers; the impossible assimilation of results observed in frogs, and even in herbivorous mammals, to what was the case in man. Many phenomena were not easily detected; and with regard to subjective phenomena, they were entirely wanting. Some phenomena were extremely fleeting; in many cases experimenters had overlooked first effects produced intentionally; and their attention had been fixed only on the grosser manifestations of disorders occasioned by medicaments, or poisonous substances. When only the results produced were taken into account, one might be tempted ever and anon to admit a great similitude of action between the most conflicting agents, such as nitrate of silver and atropine, opium and strychnine, the ligature of veins and the bleeding of arteries.

In clinical observation disorders were more numerous, more easy to be observed. The patient complained of them from their outset. No experiment could supersede this information, especially when the medical man observed upon himself. Spontaneous lesions had also an advantage over intentional wounds; they were free from all complications. For instance, a slight hæmorrhage on the course of the pneumogastric in the brain would better serve to show the triple function of the nerve than an incised wound through the substance of the isthmus, which involved the meninges, the vertebral column, the skin, and muscles. Lallemand had shown what light pathological facts might reflect on questions of physiology. Observation, like experiment, bore an explicative and triumphant character; and, indeed, it was not an easy matter to say what part should be attributed in scientific progress to experiment, and what to observation. When the physician caused the patient affected with abdominal dropsy to change his attitude, in order to ascertain whether the liquid was free or not, he performed an experiment: as much might be said in respect of the successive administration of quinine in cases of malarial fever, intermittent neuralgia, and, lastly, inflammatory sanguinious fluxions.

The whole of the discussion might be summed up thus. There is but one means of knowing facts,—namely, observation. The *savant* might confine himself to observing the phenomena as they presented themselves, or he might excite them in order the better to study them. This constituted the only difference between experimentation and pure observation. Both were incessantly confounded and mingled in daily experience. Neither in practice nor in theory was there need to separate them. On the contrary, both should be made to contribute to the advancement of science.

"Let us therefore go forth to the conquest of novel truths in the paths of experimentation," concluded the lecturer, "but let us give to experimentation the control and sanction of cool and impartial clinical observation. Let us increase by all means our scientific riches, but let us not dissipate unwisely the treasure of positive knowledge which medical tradition has bequeathed us."

◆

REMARKS ON RHEUMATISM.

By Alfred Fleischmann, Esq., F.R.C.S.,

Late Physician-Accoucheur-Assistant to King's College Hospital.

That the clinical history of rheumatic fever establishes the fact that the natural course of the disease, uninfluenced by remedies, tends towards a renewal of life, towards recovery and not death, is no reason why remedies should not be permitted to expedite the end. The argument of non-interference might be used with reference to the majority of diseases, and, pushed to its ultimate conclusion, would imply that medicine, as a means to an end, is superfluous, and the profession of it a mistake. I entirely assent to the remarks of Dr. Fuller at a late meeting of the Royal Medical and Chirurgical Society, and dissent as entirely from the conclusions of Drs. Gull and Sutton. If, in a disease of such objectivity as rheumatic fever, the do-nothing treatment—euphoniously called the mint-water treatment—is as effectual as the alkaline, what is the use of physicians and what the meaning of medicine? Not only is it an unnecessary confession of ignorance, but it is, coming from men of such standing, and endorsed with the *imprimatur* of such a society, a most dangerous dictum for the acceptance of the younger practitioner. Infidelity is, I fear, a growing phase in physic.

A contribution to the literature of rheumatic fever seems to demand the prelude of an apology, for no subject has been more overwriten; yet there is no disease, as proved by the words of the physicians above-named, the treatment of which is in a more unsatisfactory condition.

Cheltenham, from its Liassic position, is in a rheumatic locality, and it has (partly for this reason) been my fortune to see, both in public and private practice, my full share of rheumatic fever. Special reasons have given me a special interest in determining its best treatment. There can be no doubt that the alkaline treatment is gaining favor, and on every ground it is the correct one. If there is any one drug which is *contra-indicated* it is mercury; and yet, though only a young practitioner, I can well recollect when the abominable calomel and opium (two grains and a half every four hours) was the only orthodoxy. I take my stand on this ground: Is not the essence of the disease the presence of superabundant acidity, and do not alkalies neutralize acids? I do not care how many volumes have been, or may be, written on the subject; these two questions, properly answered, comprehend the pith of the matter.

Since I entered the profession, I have had thirty-four cases of acute rheumatic fever under my care. In each case I have depended upon (1) alkalies, (2) opiates, (3) blisters, (4) flannel envelopes; and with those four remedies, the rest of the drug-list may be burnt. Had I to treat as many thousands as I have had units, I should seek no further for means of cure. After careful comparative watching, I find the acetate and nitrate of potash is the best conjunction of alkalies. I give a maximum dose of half an ounce of the former and half a drachm of the latter in a claret-glass of dill water every two hours, until vomiting or nausea is produced; or, failing that, until the sweat ceases to redden litmus. In some cases it is astonishing the weight of alkaline antidote that is required to neutralsie the acid poison. In one case my patient took two pounds of the acetate and a corresponding amount of the nitrate before he had had enough. If these doses are exhibited and borne, the pain is, as a rule, mitigated in twelve hours. I do not feel sure whether it is better in all cases to give or withhold opium: I think it should depend upon the amount of pain, rather than the amount of disease. The complete envelopment in flannel and wadding is a valuable aid, for which we should never forget to thank that admirable physician, Dr. Chambers, of St. Mary's Hospital. Blisters should be a later resort, with the exception of one, half the size of a playing card, an inch and a half below the left clavicle,—an application I look upon as an almost certain preventive of cardiac mischief. In all my cases I have had only *one* instance of *original* heart complication, and that was a case rather of carditis than of rheumatic fever (the patient was well, and dead in thirty-six hours).

Of course all this has been written a hundred times: I re-write it not as a novelty, but simply recording its adoption and success in my hands. I would make, however, one or two remarks which I do not remember to have seen in print. When a patient has once had an attack, he should, if an intelligent person, be prepared for his own subsequent behavior in any future attack. He should be armed with his alkalies, and not lose an hour in commencing the treatment before the doctor comes; and if sufficient promptitude be used, the disease will be strangled in its birth. I have had some striking instances of this in my own practice. I had a valued servant who had some severe attacks before I knew her. She complained one morning to her mistress that she felt premonitory symptoms. I at once sent her to bed and put her upon routine treatment. She had every symptom of the fully developed disease except the joint-swelling and pain. Her perspiration was so acid that, although the ventilation was right, it was perceptible to the nose a flight of stairs from her room. In three days she was about her work again. I make it a rule to give into my patients' hands the alkaline prescription, and impress upon them the importance of commencing with it immediately they recognise the symptoms. In three or four other cases I know the disease has thus been nipped in the bud, and severe illnesses averted. I firmly believe the key to the puzzle why in some hands alkalies fail is, that the doses are too small and time is lost. Small doses are useless. This large amount of alkali does, I think, tend to blood impairment; but full doses of the ammonio-citrate of iron soon restore the red particles. The ammonia citrate is, in most cases (where astringency is not wanted) the best iron salt we have.

I rarely, if ever, prescribe any other form of blister except the liquid preparation. It has every advantage over other forms: notably, it *never* fails to rise over the exact area you desire. Early blisters control joint mischief, but under full alkaline treatment they are not wanted; and it should be remembered that the amount of pain a blister gives—*ab initio usque ad finem*—is not insignificant, and where movement is already synonymous with agony they needlessly add to it.

Another remark I desire to make, and that is —the relapse, which is a specific feature, and a very ugly one, in this disease, is often in defiance of all the care that may be taken. Does full alkaline treatment predispose to this? I cannot say; but this I know, that in relapse the alkaline treatment is of greatly diminished value. The helm is either answered very much more slowly or not at all. I have now such a case under my care; and I find that the immediate application of a band of liquid blister, about the size of a French (green) bean, two inches above the joint, is then of great value. Directly the patient feels the least joint pain, he himself paints on the blister. In such cases there is generally a much lower and more chronic inflammatory action, and the liquid blister, with iron and iodide of potassium, gives slow but satisfactory results.

I end my remarks by hinting that where the disease terminates—as it happily so rarely does— in death, I presume it is chiefly from heart affection and from pericardiac effusion. The recent experience of a Leeds physician (Dr. Allbutt, I think) should embolden others in tapping the dilated serous sac. Until we have more evidence, I do not see, *à priori*, why tapping the pericardium should, if skilfully performed, be so much more fraught with danger than tapping the peritoneum or pleura. I suspect, like stitches in the scalp, the evil results of wounding and exposing serous sacs are overrated.

Cheltenham, April, 1869.

ON COUNTER-IRRITATION.

By R. B. Painter, M.D., F.R.C.S. (Exam.)

The old doctrine of counter-irritation has jus been simultaneously attacked with such strenuousness by two able writers, that, as a believer in the rational use of what they condemn, I wish to put in a plea in favor of a time-honored practice. Dr. Anstie objects even to the name of "counter-irritation," and suggests that of "counter-stimulation;" but although this latter designation is most applicable in very many cases, and especially in those of neuralgia, in which even he admits blisters may do good, yet I venture to express the opinion, that in some other cases the old name may be more appropriate.

I think there can be no doubt that, in regard to counter-irritation or stimulation, as well as many other once famous remedies, it has been their abuse, rather than their proper use, which has brought them into disfavor. Take the cases of bleeding and mercury, for example, both of which are under a ban in consequence of their former reckless application. Yet who, old enough to remember their magical effect in some diseases, can doubt that the wave of fashion or opinion will one day again bring them into rational use, for theoretical as well as practical reasons?

But I am wandering from my theme. It is objected by Drs. Dickinson and Anstie that counter-irritation cannot do good, unless there is a *direct* connexion between the diseased part and the irritated part, and that if there is that connexion, a blister may do positive harm by being placed too near the inflamed part.

I quite agree that counter-irritation in the acute stage of disease, especially in children, may be most prejudicial, or if employed too near an acutely inflamed joint, pericardium, or pleura; but if applied at the proper time and place, I believe great good may be effected in several ways.

1st. In all internal inflammation and congestion, from deficient nerve-force and consequent dilatation of the capillaries, from partial palsy of vaso-motor nerves, the stimulus of the peripheral nerves may be so reflected by the efferent branches as to cause contraction of the dilated capillaries, and in that way resolution.

2nd. Or by setting up artificially an inflammation on one part of the body you may, by vicarious action, cause the internal inflammation or morbid condition to cease in another part.

3rd. Or the impression or new action set up by the irritant may break the continuity of the morbid nutrition, as a bad habit may be broken by a sudden necessity or shock.

4th. Or the artificially produced discharge may, according to the old belief, carry off peccant humors in some diseases, and benefit in a chemical manner.

5th. Or if products of inflammation have been effused, blistering may stimulate absorption.

I believe that any one or more of these physiological or chemical effects may be produced without there being any *direct* vascular or nervous connexion between the parts primarily affected, and secondarily irritated,—that is to say, there need not necessarily be immediate connexion by capillary anastomosis, and afferent and efferent nerve union. Surely in the case of the nerves (and we know how they influence the vessels), it is not needful to prove a *direct* communication. Do we not all know how marvellously the nerves are connected throughout the body? . To show that an impression on one part may influence a distant part, I will give a few illustrations.

Some years ago I had a patient—a girl twelve years of age—with a non-specific ulceration of the mucous membrane of the nose. I gave tonics, alteratives, procured change of air, and used various local applications, but all to no good purpose. At last, after two months' trial, my patient, to my confusion, was taken to an oilmonger who is an amateur doctor, and who immediately put a seton in the arm, with the result of effecting an almost immediate cure.

Again, look at the effect of plunging the hand suddenly into cold water in arresting epistaxis.

Or at the fact of a draught of cold air blowing —we will say on the leg—producing immediate sneezing. Or at the circumstance that putting the feet into mustard-and-water will sometimes so act on the nerves and bloodvessels of the uterus as to produce a delayed catamenia. Or who has not seen a mustard poultice or a blister on the chest give immediate relief, in bronchitis, from pain, dyspnœa, and difficulty of expectoration? Do we not know, also, that a diarrœha will cure gonorrhœa, and an attack of piles the headache or the gout? Yet in all these instances there is no *direct* nerve connection. In all these cases a certain impression must have been conveyed to the nerve centres, with the result of an altered discharge of nerve force, or a change in chemical action.

I suppose I must not instance the revulsive effect of an emetic in stopping an ague or fever, as vomiting is such a tremendous combination of actions. As to setons, I am quite certain, notwithstanding the inoculation of pus theory, that they are too much neglected. In head affections especially, as chronic meningitis, and in various other diseases, I am satisfied they are capable of effecting great benefit.

How, in a given case, counter-irritation may do good I will not attempt dogmatically to affirm. It may be, as has been suggested, by stimulating the nerves, the capillaries, or the absorbents; or it may be by revulsion; or, as in the case of ulceration of the nose already spoken of, by producing such an impression in some way on nutrition as to break by a wrench the continuity of a morbid functional action, whether nervous, vascular, or chemical. To illustrate this, let us take the case of a chronically inflamed part with its enlarged and weakened capillaries, and which if connected with a gland would cause it to constantly pour out a half-elaborated secretion, and continuing from continuity or habit. Put a blister or other irritant on any part of the body—but if on a part supplied by the same group of nerves as the part affected, perhaps so much the better,—an impulse will be conveyed to the spinal cord or sympathetic ganglia which will be reflected on the diseased part, and the bad habit will be broken. I say this may be so; for do we not know what a trifle will change or divert the operation of nervous action in the brain, the heart, or other organs? How suddenly a thought, a habit, a rhythm, or a secretion may be altered by a new impression. If this be so, may we not argue, by analogy, that if a mental or other habit can be changed by an idea or a new impression,—a change, as in fear, anger, or joy, influencing the whole body and its functions for good or for ill,—why may not an external impression on a spinal or sympathetic nerve influence the whole system also for good or for ill? In the one case nerve function is affected from within outwards, and in the other the reverse. Is not the body a great whole, and are not its functions and sympathies closely bound together? Where does consciousness cease? A mental habit may be changed by a new impression, and why may not a habit of organic life be changed also by some other impression? That organic functions can be made to feel the force of habit we know by numerous examples, but most prominently so by the stomach.

A diseased action, once set up, may continue from habit, just as a clock may still go even though in wrong beat; yet a very slight alteration will set all right. So, it appears to me, it is quite possible a blister, a seton, a croton liniment, or a mustard poultice, besides its more subtle action on the nerves, the capillaries, the absorbents, or the chemistry of nutrition, separately or collectively, may have a sudden effect on the whole body in altering function, as hot brandy-and-water may cure a headache or a colic by its impulsion, or as a sudden blow on the back may violently break the most subtle mental operations. In the one case *involuntary*, and in the other *voluntary*, attention is arrested by the stimulus from what had previously occupied it, and force is directed into a new channel, or equalised.

In concluding these remarks, I would beg to state that, although I have ventured to differ from the authors I have quoted, yet I am fully sensible of the good their papers will certainly effect in drawing attention in a lucid manner to the *rationale* of a practice that has been too much followed as a matter of routine.

South Kensington, March 26th, 1869.

SOME REMARKS ON THE EXHIBITION OF OXYGEN AS A THERAPEUTIC.

IN CONNEXION WITH A NEW, AGREEABLE AND EASY FORM OF ADMINISTRATION BY THE STOMACH.

By S. B. Birch, M.D., M.R.C.P., Lond.

Although, with the bulk of the profession, the true position of oxygen as a therapeutic agent may still be regarded as *sub judice*, yet scientific interest in the subject has been slowly and steadily rising from "below zero," where it stood in the years 1856-7-8-9, when I reintroduced it with cogent clinical and other evidence in the pages of The Lancet and elsewhere, and (to quote, as I have now much pleasure in doing, the words of satirical opponents) "put forward an exploded remedy dressed up in new colors."

It may probably be remembered by some readers of The Lancet that in 1856 I drew attention earnestly to Barth's inhaler with *pure* oxygen largely condensed in small iron bottles, which had much aided me in gaining my own experience up to that date; and, let me be permitted here to add, I believe it still to remain the best and most accurate method of supplying and inhaling the gas for therapeutic purposes. Two or three years afterwards professional attention was solicited by me in favor of Barth's oxygenated water (by a new process, pure oxygen being made to take the place of all the atmospheric air in the water): this had much interested me before it was made the subject of a patent by Mr. Barth. About the same time Thénard's discovery was introduced in its therapeutic aspect by Dr. Richardson. Of these two methods of exhibition by the stomach, the new oxygenated water has best satisfied me for ordinary use, since it can be taken as a *not unpleasant* beverage; while the peroxide of hydrogen is found to be a disagreeable medicine by most persons, and is certainly more apt to cause internal discomfort and flatulence than the oxygenated water. Neither of the two, however, having proved altogether satisfactory (though each is exceptionally useful and not to be quite superseded), it affords me much gratification to be able to lay before the profession a third method of administration by the stomach, to which my attention was called a few months ago, and which (judging from my own trials with it) seems calculated to prove a boon in medical practice.

Oxygenated bread (just patented by Welton with my warm encouragement) is the method in question; while I may just make the passing remark, that some years back the crude idea was tested by mixing chlorate of potash as well as oxygen gas with bread before baking, but these of course failed, no *active* oxygen remaining after the bread had been baked. The simple principle, put into practice in oxygenating *baked bread*, is somewhat allied to that which obtains in manufacturing "Barth's oxygenated water,"—viz., the substitution of pure oxygen for the large portion of the atmospheric air and carbonic acid present in bread. The bread to be oxygenated is made partially to collapse by means of an air-pump, and then oxygen, by an ingenious contrivance, is pressed into the bread so as to restore its previous bulk. One point appeared to me at first to present an insuperable barrier to the general employment of this bread,—viz., the great rapidity with which it became mouldy, even in twenty-four to forty-eight hours, before opening the tightly-closed tins. This defect has, I am glad to say, been apparently overcome by two suggestions of my own,—(1) the use of Dr. Daugleish's aërated bread in place of ordinary fermented bread; and (2) a piece of paper impregnated with a solution of phenic acid placed within the lid of each tin. The flavor transferred to the bread is so slight as scarcely to trouble the most fastidious taste, and will prove a positive advantage to some patients who desire medicinal flavor; while, if care be taken in immediately closing the tin cases on each occasion of use, the unfermented bread (oxygenated) will keep good for some days, even without the phenic-acid paper.

A surprisingly small bit of this oxygenated bread proves its special influence in suitable cases. Moreover, its relative effect on the appetite is singular. Thus on the one hand, as might be expected, it stimulates the appetite where absent or capricious; while, on the other hand, it tends to produce such a sensation of epigastric fulness, when sufficient food has been taken, as to effectually suspend (if not satiate) the morbidly craving appetite. These facts, as far as they have already been observed, are full of significance in relation to influence upon assimilation and nutrition.

With respect to the deranged conditions of the animal economy, in which oxygenated bread is specially indicated,—indigestion from nervous weakness, local or general, and lowered power of assimilation and sanguification from glandular or nervous causation,—hold the foremost place. In fact, many of those continually recurring cases of functional derangements of stomach and liver and intestinal canal, with spanæmia (which claim general recognition as demanding iron, quinine, the mineral acids, small mercurials, etc.) will be often treated, I venture to predicate, less objectionably and more effectively by oxygenated bread. Possibly it may with advantage supersede, to a great extent, animal products, such as artificial pepsine and pancreatine.

Of secondary diseases from constitutional or acquired debility, associated with perverted nutrition,—mesenteric affection and intractable ascarides in children, as well as incipient pulmonary disease, have already been found by myself to undergo considerable improvement within a week or two after commencing this bread, and under its almost unaided influence. Of permanent benefit from its prescription in such cases I cannot at present speak.

I hope to recur to the subject, if it attract sufficient interest on the part of the profession.

Kensington Gore, February 19th, 1868.

PHTHISIS AB HÆMOPTYSI.

By J. Burdon Sanderson, M.D.,

Physician to the Consumption Hospital, Brompton.

> "Ex sanguinis sputo, puris sputum et fluor."
> Hippocrates, Aphor. vii., 81.

The doctrine embodied in this aphorism, formerly believed in and received with the unquestioning submission once accorded to the sayings of the father of medicine, is now universally denied.

Some thirty or forty years ago, Laennec, guided by what seems to us nowadays a rough kind of pathological anatomy, taught that, in those numerous cases in which cough, expectoration, and all the other symptoms of consumption are preceded and ushered in by spitting of blood, the hæmorrhage had, in reality, nothing to do with its apparent consequences; in short, that hæmoptysis, although it might often appear to be antecedent to the phenomena of phthisis, could never be its cause. Now we seem to be in the way of returning to the divine Hippocrates: not, certainly, from renewed faith in his teaching, for there never was a time in which men were less disposed to retrace their old courses in this respect; but because the progress of pathological knowledge leads us to apply to Laennec's ideas as to the origin and nature of phthisis the same kind of scepticism that he applied to the notions of his predecessors. Laennec's disbelief of the possibility of consumption originating from hæmoptysis, although founded on observation, was essentially theoretical, and formed part of his general doctrine of tubercle. It was not the immediate offspring of facts, but of the notion entertained by him, and accepted by his successors up to the present time, that phthisis consists in the infiltration of the lungs with a particular kind of substance, which infiltration can only take place in persons whose blood is impregnated with a special taint, or otherwise altered in composition. So long as the fact of constitutional liability to consumption can be accounted for in no better way than that of referring it to a dyscrasia or to a morbid poison visibly represented by the material with which the diseased organs are filled, all reasoning about the etiology of the disease must be restrained within a very narrow circle. But if, on the other hand, we can succeed in so entirely divesting our minds of this notion of dyscrasia as to forget it, and content ourselves with regarding the material with which the phthisical lung is consolidated, not as endowed with some specific malignity, but merely as unabsorbed residue of common inflammatory processes, most of the difficulties disappear. For if by phthisis we mean only consolidation followed by disintegration of the consolidated parts,—if the consolidating material is, in most forms of the disease, nothing more than a product of catarrhal inflammation of the minute bronchioles, and of the air-cells into which they lead —and if such inflammation may be, and is constantly produced by the introduction of foreign substances into these cavities,—what reason is there for doubting that coagulated blood may act in the same way as other irritants?

This question is now being asked by various pathologists. In Germany it has been brought into prominence by the lucid and practical lectures of Professor Niemeyer on consumption, who, on clinical grounds, maintains on the one hand that hæmoptysis occurs more frequently than is generally admitted in persons who are neither consumptive nor ever become so; and, on the other, that, although in most cases the hæmoptysis of early phthisis is a consequence of organic change, the cases are far from being rare in which pulmonary hæmorrhage is not only the antecedent, but the cause, of chronic inflammatory processes which result in softening, and the formation of cavities. It will be remembered that at a recent meeting of the Clinical Society a series of cases were communicated by Dr. Baümler, having the same bearing as those of Niemeyer. At the next meeting (April 23rd), another and more complete paper on the same subject is announced from Dr. H. Weber. The question is one of great difficulty as well as of great importance. Of course there is nothing easier than to say with Louis "it is infinitely probable" that in every case the lungs are tuberculous before the hæmoptysis occurs, but much more difficult to prove it; for there is no reason for assuming that hæmoptysis affords any stronger evidence of organic change in the bronchial or alveolar mucous membrane than epistaxis does as regards the mucous membrane of the nares. On the other hand, there is nothing more difficult than to prove the absence of pre-existing disease in any given case. If however, it can be shown in a sufficient number of instances that an individual to all appearance healthy may suddenly spit blood, and then, after an interval of a few days, become feverish, and that in such a patient the rise of bodily temperature is associated with the appearance of the physical signs of lobular consolidation, and that the consolidated parts eventually soften, we shall be inclined to believe that the doctrine taught at Cos four centuries before the Christian era is one which at all events requires at the hands of modern pathologists more critical and more impartial examination than it has yet received.

Queen Anne-street, W., April, 1868.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

> Nulla autem est alia pro certo noscendi via, nisi quam plurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare. —Morgagni *De Sed. et Caus. Morb.*, lib., iv. Proœmium.

GUY'S HOSPITAL.

CASE OF PULMONARY APOPLEXY, CAUSING GANGRENE OF THE LUNG AND PNEUMOTHORAX.

(Under the care of Dr. Habershon.)

The case was that of a woman, aged forty, who was admitted on Feb. 10th for heart disease. She had never had rheumatic fever, but had had rheumatic pains. She had been liable to cough in the winter for some few years past. For four months she had been ill with shortness of breath and nocturnal irritability of bladder. On admission, her chief complaints were of weakness and shortness of breath. She had considerable ascites, and anasarca of the lower limbs. Her chest was resonant, but there was crepitation at the bases of both lungs. The heart's action was rapid and irregular, and occasionally accompanied with a systolic bruit at the apex, which at times, however, was absent. The urine was generally albuminous; its gravity about 1025. She expectorated rusty sputa, generally viscid, and often with a considerable quantity of blood. The insufficiency of her heart proved itself more and more plainly; but she sank slowly, and for several days before death her features were pinched and her surface cold, and she lay in a drowsy, rambling state.

On inspection of the body, Dr. Moxon found that the pleuræ were in a state of foul inflammation; the cavities containing a dirty turbid liquid to the amount of about a pint in each, and the surfaces coated with shaggy patches of discolored lymph. The left pleural cavity further contained air in the shape of bubbles, forming a froth upon the liquid in the cavity. The quantity of air was not great; it was very fetid. The right pleural cavity did not contain any air. The cause of the presence of air in the left pleura was soon seen to be this, that a sloughing of the lung had occurred over the middle of the lower lobe posteriorly, so that the lung had broken down and the pleura with it, and a hole existed which would admit one's little finger. Further examination of the lungs proved that the sloughing of the lung was the result of pulmonary apoplexy. There were many apoplectic effusions of blood in both lungs, showing all stages of the usual changes; but in three instances the inflammatory processes in the seats of hæmorrhage had gone on to gangrene. A large patch of pleura on the right lung was quite dead over one of these patches, so that perforation was imminent on that side also. The form of the heart was very characteristic of mitral obstruction, the left ventricle being very small, but the other cavities large, the left auricle especially so. The mitral valve was contracted to a singular degree, not being larger than a shirt button-hole. The left auricle was nearly filled by a large antemortem clot, which was loose in the cavity, and coated on all sides by a partially decolorised, friable, dryish layer. A similar but smaller clot had existed in the right auricle, but had become displaced, and had been the means of terminating the patient's sufferings. It had passed the tricuspid valve, turned round in the ventricle, and had gone on into the pulmonary artery, one end of it, that had fitted to the appendix, being bent down on the main mass, and there it was found distending the artery, and stopped by the bifurcation. The large, single, loose ante-mortem clots were so unusual that they were preserved for the museum. These clots are generally multiple, and often numerous, and are fixed in their places by being rooted between the columnæ carneæ, and this because they first arise in the comparatively stagnant recesses between these columns, and are then increased by the addition of layers to that surface which is exposed to the blood in the cavity. This fixation among the columns must be reckoned a fortunate circumstance, as preventing such a fatal embolism as had occurred in the present case. The other morbid conditions in the body consisted of embolic patches in the spleen and kidneys, with the usual indurated and congested state of the viscera.

The chief point of interest in this case lies in the state of the lungs. Dr. Moxon had found the same occurrence of gangrene of the lung from pulmonary apoplexy in a case of heart-disease a few weeks before this. The observation is not new. Dr. Addison used to teach that pulmonary apoplexy causes gangrene of the lung,—indeed, he went so far as to say that the circumscribed gangrene of Laennec is commonly, if not uniformly, a mere effect or advanced stage of pulmonary apoplexy; but such circumscribed gangrene does certainly occur in lungs indurated by chronic pneumonia without any previous apoplexy. This, indeed, Dr. Moxon had several times found associated with visceral syphilis. Although Dr. Addison taught the doctrine, yet it is probably not generally known, at least no notice of it is generally taken in text-books. We certainly very rarely, if ever, hear of pneumothorax from such a cause. The accident would not be difficult to recognize if, after hæmoptysis in heart-disease, signs of the presence of air in the pleura were found, and the patient became collapsed. As to the cause of the sloughing, Dr. Moxon remarked on the constant association of more or less pneumonia with the apoplexy. Unless the blood be very recently effused, there is always inflammatory formation with it in the tissue. The air-cells do not bear the presence of blood, or perhaps rather the blood will not endure the exposure to air. It is in consequence of this pneumonia, and its extension to the pleura, that acute pleurisy is so frequently set up in heart-disease when the stage of pulmonary apoplexy is reached.

CASES ILLUSTRATING THE VALUE OF THE GALVANIC CAUTERY IN SURGICAL PRACTICE.

(Under the care of Mr. Thomas Bryant.)

For some months past the powerful galvanic cautery as invented by the late Professor Middeldorpf, of Breslau, has been in constant use at Guy's Hospital; and it certainly appears to be a very valuable addition to the means the surgeon possesses for the removal or treatment of disease. Mr. Thomas Bryant, who introduced the instrument at the hospital, has used it now in a large number of cases, and speaks very highly of its value. In the treatment of the purely cutaneous and mixed form of nævi, it is of great use. In skin cancers and lupus, its value seems equally striking. For the removal of a cancerous penis or tongue, wholly or in part, it appears singularly applicable; and, indeed, for any other purpose in which a caustic or the écraseur is required. The following brief notes of cases will, however, illustrate these points better than anything else: they have been supplied by Mr. Bryant. The cases are reported by Messrs. Manby and Ticehurst.

Case 1. *Cutaneous nævus over chest.*—Alice C——, aged four months; nævus involving the skin on the left side of the chest, the size of a crown-piece. On Jan. 8th, 1869, it was cauterised deeply with the porcelain cautery, brought to a white heat by a coil of platinum wire. The whole growth was completely destroyed, and in two weeks, when the eschar had separated, perfect cicatrisation had taken place.

Case 2. *Cutaneous nævus over forehead.*—Agnes W——, aged four months. Superficial nævus over right frontal eminence, the size of a shilling. On Oct. 30th, 1868, the cautery was freely applied, not a stain of blood showing itself. A brown eschar was left; in two weeks this came away, and the parts had healed, a perfect and movable cicatrix remaining.

Case 3. *Mixed nævus over forehead.*—Robert C——, aged sixteen months. Mixed nævus, the size of a shilling, on the right side of the forehead; it was very elevated and spongy. Mr. Bryant cauterised this superficially, at first turning it into a brown eschar, and then puncturing it with another form of platinum cautery, the object of this being to destroy the deeper parts of the growth. In two weeks the whole dried scab came off, and a sound healing surface remained. In another week the cure was complete.

CASE 4. *Mixed form of nævus involving the bridge of the nose down to the inner canthus of the left eye.*—Mary G——, aged five months. Had had the nævus from birth; and in spite of many forms of treatment in different places—such as vaccination, injection, and seton—the disease spread. On Oct. 30th, 1868, Mr. Bryant cauterised it freely, both on the surface and into the deeper parts. Some little bleeding took place at the time, but it was soon arrested by the cautery. The scab did not come away for three weeks, but when it did the disease was cured. The child was seen three months later, and was still well, a white movable cicatrix remaining.

CASE 5. *Mixed nævus involving angle of the mouth.*—Emily M——, aged thirteen months, was brought into the operating theatre on October 30th, 1868, with the mixed form of nævus, involving the cheek and corner of the mouth. It had been treated without benefit by injection, seton, etc., and was steadily increasing. Mr. Bryant punctured it freely with a pointed platinum cautery. On November 12th it was quite solid. In February the child was seen by Mr. Bryant, and was quite well.

CASE 6. *Large mixed form of nævus of the neck.*—Mary H——, aged two months. Mixed nævus, two inches long by one wide, in front of neck, rapidly growing. On Oct. 30th, 1868, it was freely cauterised by porcelain wire cautery, and punctured in several spots. By Nov. 12th the scab had fallen off, leaving a healthy scar. On March 5th a small spot, the size of half a pea, had shown itself. This was touched with the cautery point, and a perfect recovery followed.

CASE 7. *Large epithelial cancer of the perineum removed by cautery; recovery.*—Eliza L——, aged fifty-nine, was admitted into the hospital, under the care of Dr. Oldham and Mr. Bryant, with an epithelial cancer, the size of a crown-piece, occupying the perineum, and involving the anus and portion of the recto-vaginal septum. It had been growing for two years. On Nov. 13th, the patient being under the influence of chloroform, Mr. Bryant isolated the base of the growth by passing three large pins beneath it into the healthy tissues. He then passed round the base of the tumor beneath the pins a strong platinum wire, and fixed it to the écraseur, screwing it home. Junction was then made with the galvanic battery, and with a few carefully applied screws of the instrument the growth was removed, no drop of blood showing itself. A white ash-colored surface was left. Rapid recovery followed the operation, the patient leaving the hospital well on Dec. 15th.

Mr. Bryant remarked that this case illustrated very beautifully the use of the cautery, for the removal of a tumor so situated with a knife would have been very difficult, and must have been attended with severe and troublesome hæmorrhage.

CASE 8. *Epithelial cancer of the integument of the nose and both cheeks.*—Sarah B——, aged fifty-three, had been the subject of skin cancer for five years, and had had many caustics applied without benefit. On October 30th, 1868, Mr. Bryant freely cauterised the whole surface with the porcelain and pointed cautery, the patient asserting that the operation caused less pain than the former caustics. The eschar that was formed came away in about three weeks, leaving a healthy surface. One small spot, the size of a hemp-seed, had to be subsequently touched; but a complete recovery took place. On March 30th the patient was still well, a sound cicatrix remaining.

CASE 9. *Spreading lupus of the face, cured by the cautery.*—Eliza T——, aged thirty, came under Mr. Bryant's care with a spreading lupus, involving the whole of the nose and upper lip. It had existed for four years, and, in spite of all treatment, had steadily progressed. On Nov. 6th, 1868, it was freely cauterised. By the 19th the scab was coming away, a healing surface remaining. By the 26th the whole eschar had fallen off, and the wound was closing. By Dec. 8th the woman was well. She was seen on April 10th, when it was difficult to make out the seat of the former disease, the cicatrices being so indistinct and the skin natural.

The two recent cases have been given to us by Mr. Bryant. They occurred in his private practice.

CASE 10. *Cancer of the penis removed by cautery.*—On Feb. 9th, 1869, Mr. P——, aged seventy-two, was sent to Mr. Bryant by Mr. King, of Camberwell, for a cancerous affection of the penis. It involved the glans and prepuce, and had been coming for some months.

On Feb. 11th, chloroform having been given, the galvanic cautery, in the form of the wire écraseur, was applied, and the organ removed. Not a stain of blood appeared. The subsequent progress of the case was most satisfactory,—a good recovery taking place. The stump which remained after the complete cicatrisation of the wound was a very good one.

CASE 11. *Cancerous tubercle of the tongue removed with the galvanic cautery écraseur.*—Mr. J——, aged forty-two, was brought to Mr. Bryant by Mr. Roper, of Croydon, with a cancerous tubercle the size of a nut on the left side of his tongue. It had been growing for five months, and had caused much inconvenience. Its removal was determined upon.

On March the 3rd, the operation was performed. The growth was first isolated by means of two pins introduced beneath its base; around this, beneath the pins, the wire cautery was placed. A few screws of the écraseur caused its complete removal, very little pain having been felt, and not a drop of blood being lost. A good recovery ensued.

Remarks.—The above cases, Mr. Bryant remarks, are fair specimens of what can be done with the galvanic cautery. They are a few only out of a much larger number that have been successfully treated by such an instrument. As a caustic to destroy skin cancers or lupus, it appears to be unequalled; and for other skin growths, such as condylomata or warts, it is of like value. For the removal of all pedunculated growths to which the ordinary écraseur is applicable, it seems to be well adapted; and for any other purpose for which a skin caustic may be used. For the treatment of hæmorrhoids it offers great advantages, and even for the treatment of anal fistula, when the fear of the knife or the loss of blood has to be considered. Upon the whole, the instruments must be looked upon with favor, as being of great value and importance.

ROYAL INFIRMARY, EDINBURGH.

THREE CASES OF PLEURO-PNEUMONIA; CHLOROFORM TREATMENT.

(Under the care of Dr. George W. Balfour.)

The following cases and clinical remarks, for which we are indebted to the resident physician, Mr. Frank Hodges, are of considerable therapeutic interest.

Case 1.—James R——, aged thirty-seven, admitted on December 5th, 1868. He "took a shivering," and was sick, on December 2d, and the same night passed blood in his urine.

On December 6th he was in a state of high fever. Temperature 102·2°; pulse 120, full and bounding; respiration 60. Urine somewhat smoky; specific gravity 1015; chlorides diminished; albumen a trace. Front of right chest is dull from the nipple downwards, and this dulness extends quite round the chest to the spine. Expectoration scanty, yellow, and tenacious. Respiration over dull portion obscured and undecided. Was ordered two drachms of ipecacuanha wine, two drachms of laudanum, and five ounces and a half of water, one tablespoonful of which was to be taken every four hours; and a teaspoonful of a mixture of one drachm of chloroform and seven drachms of olive oil every four hours. These mixtures to be given alternately, one every two hours, commencing with the ipecacuanha one. A linseed poultice to chest.—9.30 p.m.: Patient's breathing is easier, and friction sounds are heard over front of chest.

7th.—Patient much easier this morning. Temperature 102·4°; pulse 120; respiration 30; urine (specific gravity 1014) contains no albumen to-day, but a few blood-corpuscles are seen under the microscope; chlorides almost entirely absent. Dulness as yesterday, and over the dull portion a friction sound is plainly audible anteriorly; and, on deep inspiration, fine crepitation. This crepitation, however, is more evident posteriorly, where the friction sound is less audible. Expectorates freely a gelatinous yellowish mucus, mixed with pure catarrhal sputa.

8th.—Had a good sleep last night, and feels much better this morning. Temperature 98°; pulse 72; respiration 32; specific gravity of urine 1025; chlorides slightly diminished; a few uric-acid crystals seen under microscope. Lung clearing up, and for an inch and a half below right nipple, clear on percussion. There is still much external tenderness, so as not to admit of prolonged examination. Fine crepitation audible all over dull portion of lung, with only an occasional pleuritic rub. Expectoration scanty, and catarrhal in character.—10 p.m.: Pulse 68; respiration 28.

9th.—Has had another good night. Temperature 98·2°; pulse 72; respiration 33; specific gravity of urine 1015; chlorides normal. Does not cough much, and the expectoration is catarrhal, with a few streaks of yellow matter. Anterior part of lung now normal on percussion. Dulness posteriorly slight, and limited to infrascapular space. Loud friction sound is heard over whole base of lung, especially posteriorly, and at the side.

10th.—Still doing well. Pulse 68; respiration 34. Did not cough at all last night. Expectoration scanty, and purely catarrhal. Percussion now natural. Anteriorly in lower third, where dulness existed formerly, vesicular respiration quite distinct, with here and there an indistinct friction sound still to be remarked. Posteriorly friction sound still very distinct, and obscuring the vesicular breathing considerably. This continued the case for some time, even after the patient was up and going about, but had long disappeared before he was passed out to the convalescent hospital on January 6th.

Case 2.—Colnall McC——, aged twenty-eight, laborer. This patient was said to have been drinking for a week or two previous to admission, and his statements are probably, therefore, not wholly to be depended on. They amount to this: that on the 4th of January he had some rigors, followed by smart pain in the chest, with cough, which continued till he was sent to the infirmary, a distance of twelve miles.

Upon admission, on the 9th of January, at 2 p.m., the patient was in a state of great depression, the general aspect dusky; pulse feeble, and so rapid that it could not be counted. Two ounces of sherry was given, followed, after the administration of a warm bath, by a glass of brandy-and-water, and the following mixture: Spirits of chloroform, twenty minims; sedative solution of opium, two minims; decoction of bark, one ounce; taken every three hours. At half-past seven the patient had rallied. Temperature 103°F.; pulse 128, soft, and of moderate volume; respiration 44. Complains of pain in right side, about two inches below nipple, extending round to the spine. At this latter point, there is a friction murmur. No appreciable dulness on percussion at any part of chest; but a prolonged examination could not be made, patient having to be supported while the posterior part of the chest was being examined, and he became very flushed in the face, and perspired much at the conclusion of it. Ordered turpentine stupe to chest. Also, ipecacuanha wine, two drachms; tincture of opium, two drachms; to five ounces and a half of water: a tablespoonful every four hours. One drachm of chloroform to seven drachms of olive oil: a teaspoonful every four hours. These mixtures to be given alternately every two hours, commencing with the ipecacuanha one.

Jan. 10th—Morning: Temperature 102·2°F.; pulse 120, full and soft; respiration 36. Passed a very fair night; expression less anxious. At the base and posterior part of the right lung there is slight dulness on percussion, and over this fine crepitation. Friction well heard in the same spot as yesterday; coughs much, and the expectoration is tenacious yellow mucus.—9 p.m.: Temperature 102·3°; pulse 120; respiration 40.

11th.—Morning: Temperature 102·4°; pulse 112; respiration 32. Passed a good night, and breathes with less effort this morning. Still coughs much, and has expectorated a small quantity of tenacious yellow mucus streaked with blood. Anteriorly, dull on percussion from lower border of subclavicular region downwards. Over this part consonating râles were heard on inspiration, with bronchial expiration; while over the subclavicular space crepitating but not consonating râles were audible. Posteriorly, from base of lung to inferior angle of scapula, dull on percussion, and over this fine crepitation was heard; above, there was friction. To continue treatment, and to have six ounces of sherry.

12th.—Temperature 100·2°; pulse 100, soft, and of moderate volume; respiration 32. As low down as lower border of second rib anteriorly, quite dull on percussion; and over the whole of next interspace and rib comparative dulness exists, and in axillary space also. Coarse consonating crepitation heard over the whole of dull portion. Over lower part of lung percussion-sound was comparatively dull, but, except when liver came in, not so absolutely as in subclavicular space; over this portion some fine crepitation and sonorous râles were to be heard. Dulness over the whole infrascapular and scapular spaces. Bronchial expiration, but the inspiration obscured by sonorous râles. On left side respiration puerile, with a few fine crepitating râles heard over lung here and there. Urine: specific gravity 1025; phosphates increased; chlorides diminished.—Evening: Temperature 100·3°; pulse 96; respiration 32.

13th.—Temperature 99°; pulse 88; respiration 32. Percussion, anteriorly, as yesterday. Crepitating râles on inspiration. Bronchial expiration; but, as you near the sternum, this becomes more indistinct, and there is vesicular breathing. Posteriorly, much the same as yesterday, the only difference being that the vesicular murmur is heard more distinctly mixed with other sounds —9.30 P.M.: Temperature 98·2°; pulse 88; respiration 24. Urine; sp. gr. 1028; phosphates increased; chlorides slightly diminished.

14th.—Temperature 98·2°; pulse 88; respiration 24. With the exception of immediately under the right clavicle, where there is still some dulness, the chest is clear on percussion. At this part there is a little coarse crepitation; but all over the remainder of the lung breathing is vesicular. Urine; sp. gr. 1028; phosphates normal; chlorides slightly diminished; urates copious.—Evening: Temperature 99·2°; pulse 76; respiration 20.

15th.—Temperature 98·2°; pulse 80; respiration 20. Quite convalescent now.

Case 3.—Janet A——, aged twenty-four, single. On Jan. 3d she had slight rigor and giddiness, followed next day by a stitch in the right side, and cough with expectoration. She continued at her work till Jan. 9th, when the pain in the side became so severe that she had to lay up entirely, and was admitted to hospital on Jan. 10th.

Upon admission, the patient complained of stabbing pain in the right breast upon inspiration. Respiration 32, catching; pulse 120, hard, small, and wiry in character; countenance flushed and anxious looking. It being late when the patient came in, a thorough examination was not made, but a warm fomentation was ordered to the affected side.

Jan. 11th.—The upper part of the right lung anteriorly was clear on percussion, and the natural vesicular murmur was heard over it. Dulness existed from one inch and a half above the nipple down to hepatic dulness; friction sound was heard over this, and no respiratory sounds whatever. There was no expectoration, and the other symptoms pointed more or less distinctly to a pure pleurisy. The poultice was continued, and an opiate expectorant prescribed to be taken occasionally, and alternated with a diuretic mixture. Towards night the patient became very restless, more flushed in the face, and expectorated some tenacious rusty mucus. The sedative and diuretic mixtures were therefore omitted, and the patient ordered the ipecacuanha and opium mixture, with the chloroform emulsion, to be given as in the two previous cases.

12th.—Has had a very restless night, and wandered much. The dulness on percussion has increased, and now involves almost the whole lung, extending to the lower edge of the second rib. Coarse crepitation heard all over the upper part of the lung; above the third rib, with bronchial respiration and bronchophony. Beneath the third rib there was the same dulness and absence of respiration as yesterday. Expectoration scanty, but tenacious and rusty. Urine: sp. gr. 1026; a trace of albumen; chlorides diminished.—9 P.M.: Temperature 103°; pulse 108, soft, and fair volume; respiration 32. Patient easier.

13th.—Temperature 103·1°; pulse 120, soft; respiration 32. There is not so much superficial tenderness of the affected side. The dulness on percussion nearly the same. On auscultation, with inspiration there are crepitating râles heard, and bronchial expiration not so pure as yesterday. Expectoration rather more abundant, less tenacious, and no longer rusty. Urine contains no albumen; but the chlorides are still diminished. At 8 P. M.: the patient vomited, with immediate relief; and, when visited at 10 P.M., she appeared more comfortable than she had been since admission, and the temperature was then 100.3°; pulse 112; respiration 28.

14th.—Temperature 100°; pulse 128; respiration 32. Percussion clear anteriorly down to the lower edge of the fourth rib, where dulness commences, gradually passing into perfect dulness at the fifth rib. Respiration vesicular all over the front of the chest, with a few sonorous râles at the upper part of the lung. The patient had vomited twice up till 6 P.M., and on the last occasion immediately after the chloroform emulsion. This accordingly was stopped; ice ordered to be sucked *ad libitum*, and a morphia draught (a quarter of a grain) the last thing. The temperature 101·2°; pulse 108; respiration 28.

15th.—Has had no more vomiting. A few sonorous râles are to be heard at upper part of lung, with coarse crepitation between the fourth and fifth ribs; directly beneath, finer crepitation, with bronchial expiration for the space of two ribs and an interspace; below, fine crepitation, without any bronchial expiration. This being the first day the patient could be moved without great pain, advantage was taken to examine the posterior portion of her chest, and on the right side fine crepitation was found, with pure bronchial expiration from spine of scapula downwards, over which portion of the lung the percussion note was dull, the bronchial expiration being purest at the upper part, where the infiltration was most recent. Expectoration scanty, but consisting only of a little grey mucus. The left lung normal on percussion; respiration somewhat puerile.

18th.—Perfectly convalescent.

In a clinical lecture upon these cases, Dr. Balfour stated that they had been treated upon a plan which he had almost uniformly pursued, with unvarying success, since 1848. He could confirm all that the German observers, Wucherer, Baumgärtner, Varrentrap, and others, had stated in regard to the wonderful mode in which chloroform brought down the pulse, moderated the fever, lessened the oppression, and, by checking the disease, changed the glutinous into a mucous phlegm. What he did not find it do was to relieve the pain, and for that reason he always combined it with opium, usually given in combination with ipecacuanha, from an old prejudice that the latter drug might be also useful in lessening the fever.

The German observers had found the chloroform, when employed after their fashion, by inhalations, rapidly to relieve the pain. That Dr. Balfour could readily believe; but given in this way, its sedative action was occasionally developed too powerfully, and had of itself proved fatal; while given internally in the manner prescribed, its sedative action was developed gradually, in a safe and controllable manner, while the supplementary opium acted rapidly and satisfactorily in relieving the pain. Varrentrap's treatment, which might be given as a sample of the treatment by chloroform inhalations, consisted in employing one drachm for each inhalation, and these were repeated from eight to twelve times in the twenty-four hours. On an average, the treatment was continued for ten days and a half, and comprised seventy-four inhalations; the fewest number having been twenty-seven inhalations in five days, and the greatest number one hundred and sixty-two (about two pounds of chloroform) in fifteen days. Of 303 cases treated in this fashion by fourteen different observers, only 10 died, —3·3 per cent. Yet some of these cases were also bled, and some had ether instead of chloroform, neither of which circumstance was favorable to recovery. The difficulties, dangers, and expense involved in the administration of chloroform by inhalation in such cases were all got rid of by giving it internally,—one drachm thus administered producing with safety results equal to those obtained at some risk by the inhalation of one ounce. The chloroform treatment was specially applicable to those cases in which the fever ran high, and the disease threatened to be severe. And it was not contra-indicated, like other active measures, by concomitant signs of debility; for while it controlled the heart's action, and lessened the febrile symptoms, it also regulated the circulation, and tended to maintain it equable throughout the system.

◆

KING'S COLLEGE HOSPITAL.

OPERATIONS: NECROSIS OF ANKLE; CLEFT PALATE; PERINEAL SECTION; FATTY TUMOR; RECURRENT FIBROID TUMOR; LACERATED PERINEUM AND RECTO-VAGINAL FISTULA; IMPERFORATE VAGINA.

The above is a list of operations which we saw performed on Saturday last (April 24th) at King's College Hospital. A brief reference to certain points connected with some of them may be interesting, although a lengthened description is unnecessary.

When Mr. Henry Smith had removed some necrosed bone from an ankle, a boy of about eleven was submitted to the operation for cleft palate by Sir Wm. Fergusson. The edges of the cleft were pared, each in one strip,—a very narrow one. Sir William remarked that it was not often that a patient was steady enough to allow of this. He showed that the strip was almost entirely, if not absolutely, composed of mucous membrane, and insisted upon the importance of removing little or nothing else. No doubt it was very easy to cut away a tolerably wide strip from each side of the cleft; but he thought that the failure in the operation was often dependent upon this. The object should be to make a raw surface, and the less tissue removed the better.

Next was a man about thirty-five, with a tight stricture of some years' duration, with fistulous openings under the scrotum, whom Sir William endeavored, but without success, to treat with Holt's dilator; and, failing that, cut down upon a grooved staff which he had passed into the bladder. The stricture, which was a long one, was divided in its whole length, and a No. 9 catheter then introduced, and tied into the bladder. The "subject" was a bad one, Sir William pointed out, as he had been long in the habit of taking no less than a drachm of solid opium daily to relieve his sufferings. He had been in the hospital two months, and endeavors had been made to improve his general health and correct this habit. He was better, but still took eighteen grains of opium daily.

Next, a large fatty tumor (as big as two fists) was "lifted out" from the antero-external aspect of the arm over the biceps. The patient, a hearty man, did not take chloroform. Sir William made a long vertical cut over the tumor, and a few touches of the knife having been applied, he grasped the mass, and easily removed it with his fingers. He reminded his pupils that such a tumor was not "dissected" out; he should call it "lifted" out. Now and then, no doubt, a kind of dissection had to be practised in the removal of tumors; but it was much more commonly the case that a process of tearing or lifting might be employed and with great advantage. In such a case as this, the surrounding tissues were of course absolutely healthy, and to meddle with them would be very bad surgery.

Some four years ago a fibro-fatty tumor had been removed from the neck of a man by Sir William, who had afterwards again and again to cut out a constantly recurring tumor in the same situation. The patient was now placed on the table, and a small tumor again removed. Sir William remarked that some good effects had apparently been produced in his case by the frequent application of a lotion with forty grains of sulphate of zinc to an ounce of water. This had produced some drying and shrivelling of the growing textures, but had not, as was seen, been sufficient to prevent entirely the recurrence of the growth.

A woman, whose perineum had been torn into the rectum, and the sphincter ani lacerated, in a difficult labor, was next operated upon by Mr. John Wood. The edges of the cleft perineum were pared, and a portion of mucous membrane removed from the anterior wall of the rectum. Wire sutures were then introduced, and retained *in situ* by bits of bougie, after the fashion of the old "quill suture." Finer wire was then introduced to adjust perfectly the edges of the wound, and the whole covered with collodion.

In a girl, in whom the vagina appeared to be quite absent, Mr. Wood endeavored to find or construct one with the object of rendering her more "apt" for marriage, which she was bent upon undertaking. The existence of a uterus was doubtful, a small hard nodule being felt per anum, which may possibly be that organ. Into the urethra, the meatus of which was exceedingly large, a gum catheter was introduced, and then, the finger having been passed into the rectum, Mr. Wood cut down upon the plane surface of skin, which seemed all that intervened, and this being divided, a finger was forced onwards through cellular tissue, and a not deep cul-de-sac formed, and into this a porcelain plug was tied. The case did not seem a particularly hopeful one for treatment, and it was only at the patient's urgent request that the attempt was made.

A CASE OF FLOATING KIDNEY.

(Under the care of Dr. Duffin.)

In the *New York Medical Journal* for March, Dr. Shiff records a case of double floating kidney in a woman, twenty-six years old, and refers to observations upon the subject by various writers. Dr. Walther, of Dresden, he says, shows that the abnormality is to be found in a great many persons, who are not even aware of anything being wrong. Out of 35 observations collected by Dr. Fritz, of Paris, 30 were in females. Floating kidney is most common on the right side. Cruveilhier seems to think that the use of the corset in the female, and wearing too tight clothes in the male, are the main causes of the displacement; and explains the greater frequency on the right side by the fact that the spleen and stomach in the left hypochondrium offer more resistance to pressure than the organs on the right side. Trousseau, Dr. Shiff remarks, relates the case of a man who had been several times treated for peritonitis, where the tumor became extremely painful after exertion; and that of a woman who had been told the tumor was of a malignant character. He advises, where there is any pain, to apply poultices, with rest in bed; and, after the pain has been subdued by these means, to cause the patient to wear a belt, with pads placed so as to give support to the prolapsed kidney. Such a belt Dr. Shiff prescribed to his patient with apparently some benefit.

Amongst Dr. Duffin's out-patients is a woman aged thirty-seven, whose right kidney is movable, and whom we had the opportunity of examining a few days since. The discovery of the abnormality was made quite accidentally, as the patient applied for hysterical symptoms not connected with the renal organs. Her right kidney can usually be felt lying between the umbilicus and the anterior superior spine of the ilium, looking obliquely forwards and inwards. The corresponding flank, viewed from behind, is hollowed out towards the spine, the width of the right loin being two or three inches less than that of the left. The kidney can be grasped and replaced into its normal situation; the flank, then, *ipso facto*, assuming its natural width and form. The case is the most distinctly marked that we have seen.

POPLAR HOSPITAL.

DIFFUSE ANEURISM OF THE LEFT EXTERNAL ILIAC ARTERY; GANGRENE OF LEG; AMPUTATION; RUPTURE OF THE SAC; DEATH.

(Under the care of Mr. M. Brownfield.)

The patient—for an account of whose case we are indebted to Mr. Oliver Penfold, resident surgeon—was brought into the hospital on July 15th, 1868. He stated that about three months previously, when on board ship, he slipped off a foot-rope, and "strained his left groin." The next day he felt a small, soft lump there, which did not inconvenience him till four weeks later, when it was as large as a walnut; and he then sought the advice of the ship's surgeon. Compression, by means of a weight was tried; but, after two days, this was abandoned, on account of the unbearable pain it produced. During the rest of the voyage he was merely kept in bed, and had morphia given him to allay pain.

Condition on Admission.—A thin, dark, unhealthy-looking man, who looks much older than he says he is—viz., thirty years. Complains of almost constant pain in the situation of Scarpa's triangle in the left side: occupying which is a pulsating tumor, extending outwards to the anterior superior spinous process of the ilium; inwards, to within an inch of the symphysis pubis; above, Poupart's ligament is tightly stretched across it, making a depression about three quarters of an inch deep; and the swelling terminates about three inches below this ligament. The swelling is raised an inch and a half from the proper level of the thigh, and imparts an impulse, radiating from within, to the hand; and its beats correspond with those of the radial artery. A bruit can be heard by auscultating over any part of the tumor. Both impulse and bruit can be stopped by firm pressure upon the external iliac artery above, and they return when the pressure is removed. The tumor feels moderately hard, and cannot be moved about. The integument is not adherent to it, and is of normal appearance. The whole of the front of the thigh is numb. The patient's chief discomforts are: almost constant, gnawing pain, sleeplessness, and feeling of great weariness. Says he had syphilis ten years ago. There are large cicatrices on prepuce. Habits rather dissipated.

The patient was ordered to rest in bed; and to have liberal diet, with wine, and tonic medicines.

Progress of the case.—On August 1st he had improved in general health. The tumor was softer and smaller; ice had been applied to it since July 25th. On the 8th August, at 5 A.M., he complained of sudden, intense pain in the tumor, which was much enlarged, and pulsated strongly. The integument over it was a little discolored. Afterwards the swelling continued to extend in all directions, except below; so that, at last, the upper limit was just under the cartilages of the left ribs, and the inner boundary was one inch to the left of the umbilicus. The left leg became cold and œdematous, and finally gangrenous. A line of demarcation was formed by Oct. 30th, commencing anteriorly three inches above the ankle joint, and running up along the the outer border of the fibula and inner border of the tibia to the back of, and a little below, the knee. Thus the foot, ankle, and calf, were sloughing. There was also a little patch of gangrenous skin on the upper border of the patella. The skin over the tumor had ulcerated, in one place at, and in a second place a little outside, the centre of the tumor.

On Nov. 2nd it was resolved to amputate the limb, for the line of demarcation had formed, and it was thought that the removal of the dead limb would soon place the patient in more favorable hygienic conditions, whereas the natural process would take weeks to effect separation. There was a slight probability, also, of consolidation of the sac if the distal end of the artery were tied. There was no organic disease of the lungs, heart (except a slight systolic murmur at apex), or kidneys, to contra-indicate surgical interference, and the patient strongly wished the operation to be done. Chloroform having been given, the thigh was amputated a little below its middle by antero-posterior flaps. Not much blood was allowed to be lost; that which did escape came from the distal end of the cut superficial femoral artery, and when coagulated it looked like red-currant jelly. On examining the limb after removal, a little greenish pus was found in the knee-joint, and the condyles of the femur were denuded of cartilage.

At first the patient seemed much improved in spirits and comfort; but on the third day a little oozing of blood took place from one of the ulcers over the tumor, which continued until the sixth day, when the skin gave way in a fresh place, near to the anterior superior spinous process of the ilium, and the blood slowly but continually drained away—probably more than a pint in twenty-four hours. He complained now of violent "stabbing" pain in the left breast, with cough, and expectoration of sanguino-purulent sputum. He died Nov. 10th, eight days after the amputation.

Autopsy, twenty-eight hours after death.—The left chest contained much straw-colored fluid, with flaky white particles floating in it. The base of the left lung was carnified, of a green color, and firmly adherent to the diaphragm. On section, greenish purulent fluid exuded from the cut surface. There were some circumscribed collections of purulent fluid seen on cutting the right lung; these varied in size, some being not larger than a pea, others about as big as a filbert. The heart weighed ten ounces. Its outer surface was covered with a layer of recent lymph. The muscular tissue was tolerably firm, but very much conjested. The cardiac veins were injected full. The pericardium contained four ounces of pale-yellow fluid. The aortic valves were much thickened, and their bases atheromatous. The aorta was extensively diseased; large patches of atheroma studded its interior as far down as the common iliac arteries. The right external iliac, to the naked eye, seemed free from atheroma. The left external iliac was not atheromatous at its upper part; its walls seemed thinner than those of the right. The left external iliac artery continued in its usual course and calibre for two inches and a quarter from its origin, and then entered the inner wall of the sac; just before, a branch (epigastric ?), the size of a No. 8 catheter, was given off. The sac occupied the left iliac fossa; it was formed of thickened fascia iliaca and peritoneum; it also extended under Poupart's ligament into the upper part of the thigh, being limited by the adductors on the inside, by the anterior superior spinous process of the ilium on the outside; and below, it reached to the crossing of the sartorious muscle. In the pelvis, it extended to the under surface of the diaphragm; externally, to the circumference of the crest of the ilium; and, internally, to the brim of the pelvis at the left side. In the iliac fossa a large oval mass, the size of a cocoa-nut, of laminated fibrin, was found. The subjacent iliacus and psoas muscles were absorbed, only a few thread-like, tendinous fibres, reaching from the bodies of the lumbar vertebræ to the trochanter minor, being left to represent them. The anterior border and ventor of the ilium were deeply eroded. The capsule of the hip-joint was partly absorbed, and one-third of the articular surface of the head of the femur was exposed and dislocated forwards and downwards. The left external iliac artery, two inches and a quarter from its origin, entered the sac by a trumpet-shaped aperture as large as a goose-quill. The anterior crural nerve was so matted with the femoral vessels as to be scarcely recognizable. The superficial femoral artery was blocked by coagulum; the common femoral was with great difficulty traced up to Poupart's ligament, above which its continuation was lost.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

A CASE OF STRUMOUS MENINGITIS OF OBSCURE CHARACTER.

(Under the care of Dr. RADCLIFFE.)

The case of which we here give a brief record is interesting, because the child, presenting on admission symptoms of very grave character, gradually improved during her stay in hospital, and quitted it with little or no fault in her health. It is difficult to judge of the exact nature of the lesion, but probably it was more nearly allied to strumous meningitis than anything else.

Fanny P——, aged eleven years, was brought to the hospital on Nov. 23rd, 1868, in the following condition. Her appearance was deeply cachectic, and she seemed tending towards imbecility. She was carried into the consulting room, as she could not stand. Seated, she could just lift her knees from the ground. From the hips downward sensation was much impaired, being especially imperfect in the legs. The legs and thighs were considerably wasted. It seemed from her history that in the preceding June she had measles, accompanied throughout by active delirium, with singing and incessant talking. Afterwards the delirium, ceasing during the day, appeared every night. About the end of July she had sufficiently recovered to be led about the room. She appeared awkward on her legs then, but this was ascribed to weakness. In the beginning of August she was attacked with shrieking convulsions. (Ever since the measles she had complained much of her head aching at the top.) For two or three weeks she lay unconscious, screaming and foaming at the mouth, and her excretions passed involuntarily. She came, it is said, to her senses suddenly, rubbed her eyes, asked for water, and did not afterwards lose herself. During her insensibility she had been rigid, with the back arched. On examination, it was found that her head was exquisitely tender at the vertex, so that she could not wear any hat. The hair at this part was coarse and sparse; much had fallen off. She complained of a tight cord being round the head. The pupils were large and rather sluggish; the retinæ abnormally tolerant of light. It was said that she talked much in her sleep and had troubled dreams, and that her appetite was bad. The tongue was large and flabby. Under the ophthalmoscope the right optic disc was thought to be ill-defined. Both thumb-nails and two or three finger-nails show distinct transverse furrows one-third from the extremity. She was admitted, placed upon good diet, and ordered one drachm of the syrup of iodide of iron twice daily.

Dec. 14th.—She walks about the ward, but with very peculiar gait; the body stooping very much, the hands are placed upon the knees, and the legs, widely separated, are moved alternately forwards in a heavy laboring manner, the feet being lifted at their inner borders, and retracted inwards at the toes. She was ordered to get regular exercise in the gymnasium of the hospital.

21st.—Since admission, she has twice had convulsive seizures.

On Feb. 1st, 1869, she was ordered four minims of liquor arsenicalis three times daily, and on the 15th one drachm of the syrup of phosphate of iron twice a day, which latter was continued during her stay in hospital.

March 12th.—Her walk is now quite natural. There is still tenderness over a surface three inches in diameter at the top of the head. In other respects she seems quite well. Eats, drinks, and sleeps well, and has recovered her condition. Her hair does not fall off. Her pupils are moderate in size.

In the beginning of April, she left the hospital for Ramsgate, able to bear pressure upon the head and to wear a hat. The only point to be observed about her was that she did not seem to be very robust in condition.

LONDON HOSPITAL.

THE GALVANIC CAUTERY.

A male, about sixty years of age, was the subject of an epithelial growth occupying the margin of the left half of the velum palati, the root of the uvula, and encroaching upon the pillars of the fauces.

To remove this, Kröhne and Sesemann's apparatus was employed by Mr. Maunder. The platinum wire was carried through the velum on a curved needle, and, having been adjusted to the battery, the loop of wire quickly burnt through the soft parts included by it, while the patient was quite unconscious of the process. The loop was readjusted, and the tissues on the other side of the tumor were similarly secured. The loop was now replaced by a piece of porcelain with a wire spirally twisted upon it; and this, heated red, destroyed the remnant of the growth attached to the pillars of the fauces. This latter part of the operation caused some amount of pain. Not a drop of blood flowed, and when the operation was completed no pain whatever remained behind.

Provincial Hospital Reports.

SOUTH DEVON HOSPITAL, PLYMOUTH.

OVARIAN DROPSY OF TWO YEARS' DURATION; OVARIOTOMY; RECOVERY.

(Under the care of Mr. WHIPPLE.)

The house-surgeon, Mr. Francis Lovell, has obliged us with the following notes:—

Mrs. R—— aged twenty-nine, the mother of four healthy children, the youngest two years old. Her confinements have all been natural, and she has always been a healthy woman. The catamenia have been very irregular during the last year. Two years ago, after her last confinement, she first noticed an enlargement of her abdomen, on the right side. This gradually but steadily increased for the next eighteen months, until it became so large as to greatly hinder her getting about her house. She was then tapped, and eleven pints of dark-colored fluid were evacuated. During the next two months she does not think her abdomen increased at all; but at the end of this time it began to swell again, and in six weeks became as large as it had been previous to the tapping. She was then, on January 2d, admitted into the hospital, and was put upon a course of steel, and a generous diet. The catamenia, which had been absent for four months, reappeared a week after her admission. She measured thirty-seven inches round her abdomen, and suffered frequently from sickness, constipation, and pains in the lower extremities, &c. During this month her abdomen increased about four inches in circumference, and her distress accordingly.

Feb. 4th.—To-day she was put under the influence of chloroform, and ovariotomy was performed. Nearly the entire cyst was found firmly adherent to the adjacent parts, particularly to the omentum. These connexions were divided with the hot iron, and the operation was necessarily a very severe and long one. Three of these connecting bands had to be ligatured, as the cautery failed to arrest the hæmorrhage. The pedicle was about three inches long, or perhaps hardly so much. This was divided with the cautery and returned. She vomited several times during the operation, and the intestines were necessarily handled a good deal. The operation lasted an hour and twenty minutes, including the time for the chloroform. The wound was closed with silver-wire sutures, and a many-tailed bandage was applied round the abdomen. The cyst contained ten pints of dark-brown fluid, and, after the contents were all evacuated, weighed twenty-four ounces; its walls were very thick and hardened.—3 P.M.: She is very sick. Pulse 90. No pain in abdomen. To suck ice continually.—6 P.M.: Sickness continues. Pulse 96; very feeble. Skin warm and moist. She had two ounces of beef-tea, with five grains of quinine, thrown into the rectum just now, and this is to be continued every four hours.—11 P.M.: Still sick. Pulse 108; feeble. Half a pint of clear urine was drawn off at 7 P.M.

5th.—Passed a good night. No pain; skin clear and moist. Pulse 114; soft. Sickness is better.

6th.—Sickness continues. She has no pain and looks calm and quiet; has passed her urine freely.

7th.—Still sick, and has had a free use of the bowels. Half a drachm of laudanum-and-starch enema thrown into the rectum, and this has quieted the bowels, and the sickness is better. Pulse 120. No pain. Urine freely secreted. Her stomach now bears milk and beef-tea.

11th.—During the last three days she has been progressing very favorably in every way; but last night she was very restless, the sickness returned, and her face is anxious and drawn. Pulse 135; somewhat sharp. Has had two very loose, offensive motions; abdomen tympanitic, but there is no great tenderness. There is a fulness at the lower part of the wound, which feels rather elastic, and is tender to the touch. Tongue red and glazy. A poultice to abdomen. She can keep down champagne and soda-water better than anything else, so she takes this freely and likes it.

12th.—This morning there was a free discharge of healthy pus from the lower part of the wound; the rest has healed. She looks and feels much better. Sickness has quite ceased. Pulse 128; fair power. Bowels have not again acted.

23d.—Since last note she has steadily improved in every way. The wound continued to discharge for three or four days, but has now quite healed, and she has no tenderness over any part of her abdomen. She is out of bed now, takes her food well, and is quite convalescent.

BRADFORD INFIRMARY.

OBSTRUCTION OF THE BOWELS; EXPLORATORY OPERATION; PERITONEUM OPENED; BAND FOUND CONSTRICTING THE ILEUM.

(Under the care of Mr. Parkinson.)

Although a fatal termination occurred, there can be little doubt that the operation was justified in the following case. It is an interesting and important example. To the house-surgeon, Mr. Broughton, we are indebted for the report.

Henry A——, aged twenty-five, a carpenter by trade, accustomed to lifting heavy weights, and who, ten years ago, was attended by a medical man for inflammation of the bowels, applied on the 27th of November last at Mr. Parkinson's house, complaining of pain at the lower part of the abdomen and of constipation. He was ordered some aperient medicine. In the evening Mr. Parkinson visited him at his own home, and found him suffering pain over the whole of the abdomen, but more especially in the right iliac region on pressure, where there was slight dulness on percussion, but in other regions there was a little tympanitis. There was constant vomiting, but a quiet full pulse. He was ordered twelve leeches to the abdomen, calomel and opium pills, and saline mixture with hydrocyanic acid.

Nov. 28th.—No relief, and bowels not opened. Ordered to suck ice, and an enema of gruel with castor oil and turpentine to be administered. Repeat mixture. He was seen the same day by Dr. Macturk in consultation with Mr. Parkinson, and by their advice he was put thoroughly under the influence of chloroform, and, a long tube having been passed about nine inches up the rectum, two or three quarts of soap-and-water were administered. The enema remained about a quarter of an hour, bringing away with it two or three very small scybala and a large quantity of flatus.

29th.—No relief to symptoms. Ordered three drachms of sulphate of magnesia in six ounces of water, an ounce to be taken every two hours.

30th.—Stercoraceous vomiting; pulse feebler. The patient was informed that nothing more could be done but an operation, so that the cause of the obstruction, if it could be found, might be removed. He expressed himself willing to undergo anything calculated to give him a chance of life. He was removed to the Bradford Infirmary at 10 P.M. On admission, the patient's countenance presented a shrunken, anxious aspect; the tongue was clean, but slightly dry; the skin warm; the pulse feeble, 106; the vomiting was constant and stercoraceous; the abdomen was slightly distended and tympanitic, excepting in the right iliac region, where there was dulness, as at the commencement of the illness. He did not complain of pain, except on pressure. There was no external evidence of hernia. A consultation of the medical officers having taken place, it was thought, after the history of the case had been carefully reviewed, that the obstruction was in the small intestines, so it was decided to open the peritoneum and explore. At 12 P.M., therefore, the patient being placed on the operating-table, ether spray was applied to the abdomen in the right iliac region, and an incision made along the outer edge of the rectus muscle, commencing above on a level with the umbilicus, and extending downwards to Poupart's ligament. Mr. Parkinson then carefully dissected the parts, until the bowels were exposed, which at the lower part of the abdomen were slightly congested. A considerable portion of intestine was gently drawn out, and there was seen a band tightly constricting a piece of bowel. The band had all the appearance of very contracted bowel, was rather thicker than a quill, and had a whipcord feel. Mr. Parkinson, fearing to divide it with the knife, hooked it up with his finger, and was withdrawing the bowel from under it, when the band suddenly gave way, thus at once relieving the stricture. The bowels were instantly replaced, and the wound brought together by silk sutures. The peritoneum was not included in them, because it had retracted; and, besides, the bowels protruding themselves caused difficulty in the attempt, so that it was abandoned to prevent delay. A pad of lint, a sheet of cotton-wool, and a bandage were applied, and the patient put to bed. He was not on the operating-table more than ten minutes.

Dec. 1st.—1 A.M.: The patient expressed himself relieved. The pulse was fuller, 96; respiration 34. Half a grain of acetate of morphia in solution was injected subcutaneously in the epigastric region. He has just vomited slightly. Ice ordered by mouth.—4 A.M.: Has slept slightly at intervals. No more vomiting, but slight retching. Ordered an enema of brandy (two ounces) and tincture of opium (one drachm).—9 A.M.: Has slept two or three hours. The pulse is better, soft, 100; respiration 25. Ordered an enema of brandy (two ounces) and beef-tea (two ounces), with yelk of an egg.—12 noon: Enema repeated, with addition of tincture of opium (one drachm).—4 P.M.: Patient seems altogether improved; has a better expression of countenance. Enema repeated.—9 P.M.: Pulse 104; has slept a little.

Enema repeated.—11 P.M.: The patient has suddenly become much worse; is very restless, and has an anxious aspect. The pulse is sinking; the skin is cold and clammy. There is now no vomiting, and the bowels have not acted. From this time he rapidly sank, and died at 4 A.M. on Dec. 2d, twenty-eight hours after the operation.

Sixteen hours after death, the abdomen was opened. No union had taken place in the wound. The surface of the bowels at the lower part of the abdomen was slightly congested. There were no adhesions, and no serum or lymph anywhere visible. The bowels were slightly distended. There were two or three small clots of blood in the cavity of the peritoneum. Across the circumference of the ileum, about four feet distant from the cæcum, extended a dark, almost livid, mark, about the sixth of an inch in breadth. Corresponding to this mark, there was a slight depression, and the peritoneal coat was cut through. Tracing the mark around the gut to the mesentery, there was seen attached to the mesentery one of the portions of the broken band. This portion was about half an inch long, rather thicker than a quill, had a firm resisting feel, and was evidently composed of organized lymph. A small clot of blood was effused around it. The other portion of the broken band was attached to the apex of the appendix vermiformis cæci, was a quarter of an inch long, and corresponded in all respects to the other portion. The peritoneum, which forms a mesentery for the appendix, and retains it in its place, was, along the line of its attachment, thickened into a band, similar in character to, and continuous with, the band attached to the apex of the appendix. On passing a probe along the interior of the appendix to its apex, it was found to be impervious. The ileo-cæcal valve was normal. The bowels below the stricture contained a considerable quantity of fluid fæces; those above a lesser quantity. The obstruction was thus caused by the vermiform appendix, and the band attached to it, stretching across the circumference of a portion of the ileum, and attached to the mesentery of that portion.

◆

MISCELLANEOUS CASES.

With this heading we propose to furnish from time to time a column which shall contain a brief reference to medical and surgical cases *under treatment at the moment* in various hospitals. Our aim will be to provide a sort of index to cases of disease, so that scientific workers in various directions may learn in what quarter they can see for themselves, or gather information respecting a patient whose malady especially interests them. Registrars, house physicians, and house-surgeons have it in their power to increase materially the utility of this column of reference with very little personal trouble; and we rely with confidence upon their help in a work intended particularly for the mutual convenience of those engaged in the study of disease as it is presented in the wards of our hospitals.

ST. BARTHOLOMEW'S HOSPITAL.

Antiseptic dressing.—In a case of chronic abscess of the arm in an old woman of eighty, Mr. Callender, after opening it, dressed the wound with Mr. Lister's antiseptic lac. We saw this removed eleven days after application, when the wound was found healed. The lac is spread on calico, and is applied by means of plaster strips. It is to be obtained at the Apothecaries' Company, Glasgow.

Erysipelas.—A melancholy sequel to operation is shown in the case of a woman aged thirty-seven, from whom, some weeks since, Mr. Paget dissected out a very large bursa patellæ. Erysipelas followed, invading the whole thigh; sloughing took place; sinuses appeared, and required slitting up; the result of all being that the patient now presents a huge gap some inches broad, extending from the knee nearly to the groin. The wound is healthy enough, but the woman is in a very low condition, in spite of careful nourishment and stimulation.

Wound of thigh.—A shoemaker, aged thirty-seven, had contrived to run his knife into the outside of the thigh, inflicting a severe wound, which bled profusely till pressure was applied. Six days afterwards it burst out again, and ten days subsequently fresh hæmorrhage took place, and he was admitted into the hospital. Mr. Callender opened up the wound, but failed to find any vessel requiring ligature. However, there has been no bleeding since, so it is probable that a partly divided artery got completely cut through during the operation, and has therefore ceased to bleed. The wound is now healing under a carbolic acid dressing.

Syphilitic phagedæna.—In a woman aged thirty-three, with extensive phagedænic ulceration over the patella (syphilitic history), Mr. Callender is applying resinous ointment, and using no specific treatment. The object is tentative, but the patient so far could not be doing better.

LONDON HOSPITAL.

Fracture of both patellæ.—A ship steward, under Mr. Curling's care, has both patellæ transversely fractured by muscular violence. There was at first considerable effusion into the joints. The inclined plane was adopted for a few days, and ice applied to the knees. Broad back-splints were then adapted to the extremities by strapping and bandages. The position of the fragments is highly satisfactory.

Skin disease.—Under the same surgeon's care is a man, aged sixty-four, with extensive disease of the skin of the right half of the head and face. Its nature is difficult to describe; and it is not easy to give a name to the affection, which suggests to different observers the idea of lupus, eczema, or serpiginous syphilis. It began, the man says, about twelve years ago by a speck, about the size of his nail, in his whisker, and gradually spread. The skin is deeply ulcerated, and the cartilage of the upper part of the ear is exposed. Since his admission he has had several attacks of erysipelas.

Wound of brachial artery, and division of median nerve.—A man, aged forty-nine, cut his right brachial, or perhaps rather its bifurcation, with broken glass. Mr. Ruttledge, the house-surgeon, tied three bleeding vessels. The median nerve was divided. Sensation is lost on the palmar aspect of the thumb and the two next fingers, and is dulled on the outside of the ring finger, but is good elsewhere.

UNIVERSITY COLLEGE HOSPITAL.

Carcinoma of omentum and lung.—Under Sir Wm. Jenner's care is a single woman, aged twenty-eight, who presents the following symptoms: The belly is much enlarged, and through its walls are to be felt a large number of very hard nodules, easily movable. There is enlargement of the superficial veins on the trunk and extremities. There is dulness, bronchial breathing, and bronchophony in the right side of the chest. The arms are very œdematous, the swelling being limited rather abruptly about the insertion of the deltoids. The face also is œdematous, and the lips are purple. There has been apparently phlebitis in the arms. It would seem that there is carcinoma of the omentum, with secondary deposit in at least one lung.

KING'S COLLEGE HOSPITAL.

Syphilitic laryngitis; tracheotomy.—A man, aged twenty-seven, was admitted, under Dr. Duffin's care, on the 24th of March, with suffocative symptoms following a pustular eruption and scars on the forehead. On admission, inhalations of steam were employed; under which he improved at first, but at the end of four days his suffocative symptoms returned, and tracheotomy was performed. Breathing was immediately improved, and has since continued good. A convenient arrangement is being employed for supplying warm and moist air for respiration. Over the throat is placed a wooden box, at the bottom of which are introduced flannels wrung out of boiling water.

Rheumatic arthritis.—Under the same physician's care is a woman, aged forty-four, who came in on the 9th of February with rheumatic arthritis. The knees and ankles were chiefly affected on admission; but they have somewhat improved. There is now great enlargement of the wrists, elbows, and shoulders, which are very painful. There is none of the grating to be noted which is so often observed in the joints in such cases. The affection has existed for fourteen months, in attacks which have lasted from six to ten weeks, with intervals of comparative exemption for two or three months. Her temperature has varied from 99·2°, to 100·2°, and her pulse has always been high. Whilst taking iodide of potash, there were considerable variations of temperature. No crystals of uric acid have been found in her blood. A sister died of cardiac disease following acute rheumatism. She has taken sulphate of iron in five-grain doses, guaiacum, iodide of potash in ten-grain doses, cod-liver oil, quinine, and has used stimulating embrocations; but without appreciable relief. Hot air baths made her worse. No remedy has apparently been of use to her.

Colotomy.—Mr. Prescott Hewitt opened the colon of a woman, aged sixty-four, who was admitted on the 7th April for obstruction dependent on cancer of the rectum, and who, a few hours after admission, got stercoraceous vomiting, and seemed likely to die. Starting from the erector spinæ, Mr. Hewitt made a cut four or five inches long towards the navel about two fingers' breadth above the crest of the ilium, coming down upon the quadratus lumborum, and then the left kidney, in front of which was the colon, contracted to the size of a finger, and consequently difficult to find. It looked like a piece of small intestine. The bowel having been stretched above and below to the edges of the wound, a vertical cut was made into it, measuring about three-quarters of an inch. The extra portion of the wound, not required for the artificial anus, was then closed by silver sutures. Complete relief followed the operation; and two days afterwards some fæces passed per rectum. A week after the operation she was going on most favorably.

Spike wound of lung; emphysema.—Under the same surgeon is a man, aged forty-eight, who slipped off a wall, dropping about six feet on to a palisade, a spike entering his chest, and forming a wound about two inches long between the ninth and tenth ribs, right side, in front. The lung was wounded, giving rise to emphysema of the subcutaneous cellular tissue over the chest and abdomen.

MIDDLESEX HOSPITAL.

Typhoid fever.—At what date should meat be given in a case of typhoid? Under Dr. Murchison's care is a man to whom meat was only ordered on the thirty-eighth day, the patient having had an attack of hæmorrhage a fortnight before. Dr. Murchison told us, in reply to our inquiry, that he does not give fish until the twenty-sixth day, and withholds meat until the thirtieth day. He often meets with cases of fatal hæmorrhage or peritonitis in cases of typhoid where there has been no diarrhœa. Supposing hæmorrhage to occur, he would wait fourteen days before giving meat, and then he would not allow it if there was diarrhœa.

GUY'S HOSPITAL.

Presystolic murmur.—A good example, in a boy under Dr. Hilton Fagge's care, who had acute rheumatism a year ago, which did not confine him to his bed.

Psoriasis unguium.—Under Dr. Fagge's care is a woman, aged thirty, whose finger and toe nails are enormously thickened, lengthened and horny. She was quite well in July last; has been married six years; has had two children, and no miscarriages.

Hydatid of liver.—In a girl, aged seven, with some hydatid tumors of liver, Dr. Fagge has applied electrolytic treatment, with the result that the swellings have decreased in size. Dr. Fagge is inclined to believe that the process acts by liberating hydrogen, which then forces the hydatid fluid out of the cyst into the serous cavity.

ROYAL FREE HOSPITAL.

Syphilis; Cardiac murmur.—Under Dr. Rickards's care is a young woman, who was admitted on March 31st, with general roseolous rash, nodes on scalp, and syphilitic history. She had shooting præcordial pain. There was a systolic murmur, very loud at right apex; none at the base, but heart sounds prolonged and accentuated. There is now no decided murmur at apex, but the first sound is prolonged. At the base there is a superficial grating systolic murmur, audible in second interspace, but not along the aorta. No signs of anæmia; no increase of cardiac dulness; an undulatory impulse. No rheumatic fever since last November. Dr. Rickards looks on this as probably a case of pericarditic murmur, accompanying secondary syphilis, but without rheumatic symptoms.

Concussion of spine.—In the same hospital, under Mr. Weeden Cooke's care, is a young woman, who fell across a tub in the middle of March, striking her back. She was unable to get up, and was carried to the hospital. There was no evidence of fracture of the spine. There was no paraplegia, but for fourteen days after the accident she could not pass any urine, which was therefore drawn off. She lies on an air-bed. She cannot lift herself up, but can move the legs freely. Pressure caused some pain over the seventh dorsal spine. About a week after admission she had numbness in left leg, but for a short time only. There has been no formication or cramps, and sensibility was found perfect in each leg. She is inclined to be hysterical, which, it is said, was not the case previous to her fall.

Dr. Cockle has a case of dilatation of the innominate artery, in a woman aged forty-eight years. It is six years since she first noticed pulsation.

Medical Societies.

JUNE—JULY.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Dr. Burrows, F.R.S., President, in the Chair.

ON THE OPERATIONS FOR THE RELIEF OF CHRONIC INVERSION OF THE UTERUS, WITH THE ACCOUNT OF A CASE SUCCESSFULLY TREATED BY A NEW METHOD.

By Robert Barnes, M.D.,

Obstetric Physician to the St. Thomas's Hospital.

The author discusses the merits of the various operations hitherto employed for the relief of chronic inversion of the uterus, tabulates the cases in which operations have been resorted to and which are not recorded in Mr. Gregory Forbes's memoir in the Medico-Chirurgical Transactions, adds these cases to Mr. Forbes's tables, and compares the results of the different methods. Of cases treated by ligature only, 26 were successful, 10 unsuccessful, and of the latter 8 died; of cases treated by ligature and excision, 9 were successful, and three ended fatally; of cases treated by excision only, 3 were successful, and two died; of cases treated on Tyler Smith's plan, by sustained elastic pressure, 6 successful cases had been published; and of cases treated by forcible taxis, some had proved successful, but three had died. The ligature and excision were open to the double objection that, besides being very hazardous to life, success was only achieved at the expense of mutilating the patient. Forcible taxis was a violent and often fatal proceeding. Sustained elastic pressure had given remarkable results, but cases would occur where the constricted cervix uteri would resist simple pressure. The author related a case of inversion of six months' standing which resisted elastic pressure kept up during five days: and in which he resorted to a plan, thus practised he believed for the first time, of making three longitudinal incisions into the os uteri, so as to relax the circular fibres; taxis then applied quickly succeeded. The woman made an excellent recovery. The author proposes, as the best proceeding where simple sustained elastic pressure fails, to make an incision on either side of the os uteri, and then to reapply the elastic pressure, as being safer from the risk of laceration than the taxis. He concludes with some propositions relating to the diagnosis of chronic inversion from polypus.

Dr. Protheroe Smith said that Dr. Barnes had just given a positive proof of the cause of the difficulty in reduction. He had himself operated successfully on a case of sixteen months' duration, and was of opinion that he could suggest a means of overcoming the resistance without resorting to the knife. In the case referred to, the inversion was complete when the patient entered the hospital; but manual pressure effected sufficient reduction to restore a margin of cervix. He contrived an instrument, having two steel blades, made to pass between the inverted uterus and the cervix, and to open by a screw. This was applied at 10.55 A.M., and the dilating action kept up until 4 P.M. He then reduced the inversion by pressing on the inverted fundus with a stick having a padded knob at its extremity. The case did perfectly well, and the patient has since given birth to two children.

Mr. C. Brooke suggested that Dr. Smith's dilator might be improved by giving to the blades a form that would render them less liable to slip.

The President said that it had just come to his knowledge that a distinguished visitor was present, who would, he hoped, communicate the results of his experience. The Society held the "northern lights" in high estimation.

Sir J. Y. Simpson acknowledged the complimentary invitation of the President. He greatly admired Dr. Barnes's paper which was by the hand of a master. He had seen only a few cases of inversion. Two of the patients had died after excision of the inverted uterus, and this operation should, he thought, be abandoned. In two cases he had replaced the uterus by forcible pressure, and in one of these he found that the cervix had split before the reduction was effected, so that, in a rougher way, he had performed Dr. Barnes's operation. In consultation he had suggested various methods of dilating the cervix; and it had occurred to him that the inverted uterus might be perforated by a trocar, and the cervix dilated or incised by instruments passed through the perforation.

Dr. Barnes thanked the Society for the manner in which his paper had been received. He thought Dr. Smith's method of dilatation involved some risk of laceration of the upper part of the vagina, and that the stick for pushing up the uterus was highly dangerous. Such an instrument had been used in France, under the name of *repoussoir*, and laceration had been a common result of its employment. The operator could not feel where it was going, or what it was doing, and the hand was the only proper instrument. M. Courti had reduced a very chronic case of inversion by passing two fingers of one hand into the rectum, and hooking them over the upper margin of the displaced uterus, while the other hand made pressure in the vagina.

Dr. Protheroe Smith explained that the use of his stick was free from danger. The left hand in the vagina held and guided the instrument, while pressure was made by the right.

ON THE SPONTANEOUS CURE OF HYDATID CYSTS.

BY CHAS. KELLY, M.D.

(*Communicated by* Dr. GEORGE JOHNSON.)

The paper began with an account of those hydatid cysts which were found after death in a putty-like condition; and arguments were brought forward against the theory, generally received, that this condition was brought about by the absorption of the fluid contents and consequent contraction of the cyst. It was showed (1) that there was no vascular connexion between the outer fibrous sac and the endocyst by which such a process could occur; (2) that there were no signs of puckering or contraction, in the cases recorded, of the surrounding tissues, as should be the case if absorption had occurred; (3) that some small tumors had been found in this condition in the substance of the liver, while the tissue around was merely condensed; (4) that the outer sac was generally globular and tense; (5) that although drugs had been given in some cases with the apparent effect of causing absorption, yet none were verified by post-mortem examination.

The author then maintained that the explanation of the phenomena that occurred was, that the hydatid, becoming embedded in some organ, soon had a fibrous sac formed around it; that as the hydatid grew this sac expanded in proportion, if the walls were not too resisting, and if they were properly nourished; as a consequence, the laminated membrane merely lined the sac, and the fluid contents were derived from the pabulum, which having passed through the fibrous tissue, moistened the outer surface of the endocyst, which then secreted the hydatid fluid. If, on the other hand, the outer sac was too resisting, the expansion ceased, and, in consequence of the relative disproportion of growth, the endocyst became folded upon itself, as was found nearly constantly in post-mortem examinations. That for a while nutritive changes went on, till, after a time, the supply of pabulum was not enough to nourish the hydatid, and it died; or, in other cases, the outer sac became atheromatous and calcified, and death ensued from the nutritive fluid being cut off. The cure, then, was the result, not of absorption of the fluid contents, but of the death of the hydatid from not receiving enough pabulum on which it could live. Thus the involutions of the endocyst were not produced by the contraction of a larger cyst, but were a natural consequence of an impeded growth; and thus the globular shape of the sac was accounted for, and the absence of any cicatrisation of the tissues. In nearly all the cases recorded, the cysts were of small size, and seldom recognized during life. The diagnosis of some would most probably have been made if they had once been larger, as the endocyst has been met with four times the superficial area of the outer sac, and in most two or three times the size. Now, if the endocyst had merely lined the outer sac, as is the case where they contain much fluid, the cyst must have once been of such a size as to give rise to symptoms, and to be made out during the lifetime of the patient.

The conditions favorable for spontaneous cure are:— 1. A dense, unyielding fibrous sac. 2. Atheromatous, calcareous, or cartilaginous changes in the outer sac. 3. A situation in some organ or tissue where expansion cannot take place readily. 4. Relative disproportion in growth between the endocyst and outer sac. All these changes concur in preventing a due amount of pabulum from entering the sac, and so causing the death of the hydatid. An opposite condition of the tissues led to the formation of a large cyst, with very fluid contents. In all cases the hydatid would begin in the same manner, but during its early development the above conditions would lead to spontaneous cure, or, if absent, would cause a large cyst to be formed. The practical conclusion drawn was, that drugs were of no use in treating hydatid cysts; that in cases where fluctuation could be made out, no spontaneous cure could be effected, and that where this took place it was dependent upon the condition of the parts in their early development.

A table was appended with a short account of forty cases, in which this natural process of cure took place: nearly all were found in the liver; none in any tissue where compression could not have been exerted.

Dr. Drysdale wished to ask one or two questions. He understood the author to mean that it was proper to operate as soon as a hydatid cyst containing fluid was detected. He thought this unnecessary. A man had been under his care at the Metropolitan Free Hospital with a fluctuating tumor of the epigastrium, presenting *fremissement*, and being apparently a hydatid cyst of the liver. No treatment was employed; and when he saw the man again, two or three months later, the tumor had disappeared.

Dr. W. Ogle observed that many preparations in the museum of St. George's Hospital seemed to confirm the view taken by the author. In these there was no puckering of the tissues external to the cyst; and the endocyst, much larger than the ectocyst, was folded within it. He thought, however, that cases of spontaneous cure occurred also in another way,—namely, by suppuration within the cyst, and subsequent drying up of the contents. He believed that the yellow matter was dried pus, and instanced the cases of two soldiers who died in St. George's Hospital from different causes, but both of whom had previously had dysentery, and in both of whom a cavity containing dried pus was found in the liver. He might mention that hydatid cysts were very rare. They had been found in the post-mortem room at St. George's in only 18 out of nearly 3000 cases; and in only six of the eighteen had they been the cause of death.

Dr. Hill mentioned the case of a girl, ten years of age, who suffered from retention of urine, and in whom a hydatid cyst was discharged through an ulcer in the vagina.

Dr. Kelly replied to Dr. Drysdale by saying that he had been careful not to enter upon the question of treatment; and that he thought in the case described the evidence was hardly sufficient to exclude the possibility of error. In reply to Dr. Ogle, he did not believe that the yellow, putty-like matter was real pus. Under the microscope it appeared to consist chiefly of fat, intermixed with hooklets, phosphates, and granular *débris*.

MEDICAL SOCIETY OF LONDON.

Dr. Richardson referred to the question of the immunity of pigeons from the narcotic action of opium, and stated that, from certain experiments he had recently made, he was sure that this immunity was an undisputable fact. He had given to a pigeon, twenty, thirty, and forty grains of the drug, and that repeatedly, in the liquid as well as in the solid form, without the least ill effect on the bird. He took from a bag, whilst speaking, a pigeon to which he had given fifty grains for six days consecutively, and during the evening he administered sixty more grains of opium, the bird subsequently remaining well and lively. Dr. Richardson had not found that even constipation had followed his experiments. As yet he had not examined the secretions or excretions to see what becomes of the opium. It was a point of considerable interest to determine whether all birds, even those which are carnivorous, were insusceptible to opiates; whether they were uninfluenced by other vegetable poisons; and whether the bird, aided by its high temperature, decomposes the opium given; the drug certainly does not cause the heat of the pigeon to lessen.

Several speakers continued an interesting discussion. Dr. Thudichum referred to other instances of immunity, such as that of the rabbit from the action of digatalis, which it eats with impunity; and that of the ichneumon from the snake poison. Dr. Broadbent and others suggested that poisons which acted upon the spinal system of nerves were alike hurtful to all living creatures, but that the difference in action of narcotics and some other remedies might be accounted for by the presence of the higher nerve centres in the one, and their absence in another animal, these being the parts which were specially acted upon by certain drugs.

Dr. Sansom then discussed, in an interesting paper, the subject of Fermentation in Living Bodies, with the view of showing that many diseases depend thereon, and that the use of sulpho-carbolates was beneficial, for the reason that these remedies check fermentative action. After sketching the history of the zymotic theory of disease, and the analogy between zymosis and infectious disease, the author traced the evidence which seemed to point to the influence of organic germs in the genesis of the twain conditions; and divided "disease-producing germs" into two classes—the one in which the seat of their development and growth was in the blood itself, and the other in the intestinal canal only. He detailed experiments with the view of showing that fermentation can occur within the living body with ill results. The effect of carbolic acid was to prevent such changes, and it was efficacious, not only as a preventive, but as a disinfectant, therapeutically. But there were difficulties in the way of the administration of carbolic acid itself, and Dr. Sansom had found that the absorbable sulpho-carbolates at once gave up the carbolic acid when they reached the interior of the body; and for that reason, and because he had found them of special service in the dyspepsia of phthisis and suppuration, (probably connected with some kind of zymosis,) he asked that their efficacy might be put to the test. His own experience had taught him that the value of the remedies in zymotic diseases was very great.

Had time permitted, a discussion would have taken place, but it was postponed, after a declaration from Dr. Richardson that he should resolutely dispute the author's conclusions as to the zymotic theory of disease.

A good practical paper "On the Syphilitic Affections of the Throat," using that term in a wide sense, was read by Dr. Morell Mackenzie. The author, in fact, broke a great deal of new ground in the account he gave of his laryngoscopic explorations. The venereal affections of the thrachea and larynx had, up to the introduction of the laryngoscope, been examined post mortem; but during life they had been clinically unobserved, though not uncared for. The laryngoscope, of course, now places the practitioner at an immense advantage, in that it enables him not only to examine and to watch, but also to have the freest access to the diseased surfaces that were formerly out of his reach, and to apply remedies thereto which check the progress, and remove the effects of disease, be they slight or serious. The advantage of laryngoscopy was well exemplified from an examination of a series of highly finished drawings and morbid specimens handed round the room for the Fellows' inspection. Dr. Mackenzie described in detail the various kinds of secondary and tertiary diseases seen in the larynx and pharynx. He stated that the erthematous forms of inflammation often underwent spontaneous cure. Deep ulceration in the larynx he had found to be rare; and patients in whom such did occur were often tuberculous. Mucous tubercles in the larynx were not frequent, and not recurrent; in the pharynx they were more prone to undergo ulceration. The author pronounced himself, in regard to secondary syphilitic affections of the throat, a "non-mercurialist," trusting, as he did, to inhalations of creasote, to lotions of perchloride of iron, and the application of tincture of iodine especially. Syphilitic nodules were often found in the larynx, and bore some resemblance to phthisical disease; but in the latter case deposits had a greater tendency to soften and to ulcerate, and there was more discharge. Gummy tumors of the parts about the throat were particularly mentioned as preceding deep and extensive ulceration, erosion of the cartilages, and secondary œdema. In this and other forms of tertiary disease, Dr. Mackenzie gives largish doses of iodide of potassium only. Paralysis of the muscles about the larynx, deformity from cicatrisation, myositis, neuritis, and also gummy tumors at the base of the tongue, were noticed in detail, and a case of primary perichondritis was related. Difficulties of diagnosis arise when the seat of disease is in the larynx. Here syphilis, phthisis, and cancer might be confounded. In syphilis, ulceration is extensive perhaps, but there is not much thickening, and the eppiglottis is the chief seat of disease. In laryngeal phthisis there is uniform thickening always preceding ulceration, and the cartilages of Wrisberg and Santorini are primarily affected. In cancer there is great irregularity, with much deposit, and the relative position of parts is altered. The disease attacks the neighborhood of the arytenoid cartilages, and the posterior wall of the pharynx is affected. The general symptoms in each case, the temperature, the state of the lungs, the cachexia, and various co-existences, aid, of course, materially in diagnosis. It should be noticed, perhaps, in addition, that Dr. Mackenzie gives the iodide of potassium with large quantities of water, and continues it for some time after the healing of the ulcers. He cleans the latter very thoroughly before using his caustic or astringent remedies.

Mr. H. Lee, Mr. de Mérick, Dr. Tilbury Fox, and others, took part in the discussion, which was complimentary to the author of the paper, though the three speakers differed from him, specially in regard to the use of mercury in secondary syphilitic affections.

The question of the influences that retard or accelerate the increase of population in various countries, is just now attracting a considerable amount of attention, and Dr. Routh has very opportunely brought together into a small compass, in a paper which he read before this Society, an account of the general "causes which lead to the unproductiveness of marriages, considered from a national point of view."

The author of the paper avoided the discussion of the special individual peculiarities which were connected with sterility, and confined his attention to the larger question, as affecting the increase of nations in the mass. Marriages are less productive—and figures were given to substantiate these propositions—amongst the upper classes; wealth tends to diminish procreation; marriages are less prolific in large than in small towns. In France, the average births to a marriage are 3.52; in thirty-nine towns, with above 20,080 inhabitants each, 3·05; in some only 2·20; and in towns with less than 20,000 inhabitants, 3·56, and in some, 4·47. Persons engaged in agriculture are less productive than those not so engaged, as shown by Mr. Purdey's statistics: taking three degrees in which the agricultural population abounds in districts, the proportional increase appeared to be respectively 21·9, 39·2, and 73·1. Polygamy results in the births of a greater number, but there is a large mortality amongst the young. Prosperity in a nation increased the number of marriages; and the number of conceptions was diminished when wheat was cheaper, contrary to some opinions. Vitiated food markedly lessened the increase of populations, as in the case of the Maories. As the result of preventive habits, the births in France are as *nil* to the increase of population, which is wholly accounted for by the increased longevity of the population from 30 to 38 years. Marriages of consanguinity are often prolific, but the offspring short-lived; and marriages in small communities have a like result, as in the Channel Islands.

Dr. Routh next proceeded to point out the causes that lead to increased procreative power, such as climate, emigration, &c. An emigrating population, on its arrival in a new country, increases largely; as in America, where the rate of increase is 57·19 with foreigners, as against 42·8 in the native population. Early marriages are on the increase in England.

The paper, which was a very able one, concluded by drawing attention to the practical bearings of the several points noticed when the physician is consulted in cases of sterility.

DR. HUGHES BENNETT ON PNEUMONIA.

Dr. Bennett, in a paper on pneumonia, commenced by condemning the existing mode of clinical and therapeutical observation of cases as insufficient, declaring that four things were necessary to a satisfactory observation: an accurate diagnosis of the disease present, a thorough understanding of the pathological conditions, a careful marking of the progress of the cases under criticism, and, fourthly, the preparation of a statistical chart embodying the treatment.

The author next stated that since the publication of his 129 cases of pneumonia, some years since, he had watched the progress of professional opinion, and the additional evidence that he had obtained has only strengthened his views. He referred to the circumstance that his own cases included acute primary pneumonia, whereas other observers had not drawn a distinction between these and instances of secondary pneumonia. Dr. Bennett referred especially to some remarks of Dr. Sieveking, recently published, in which he sought to lay down, amongst others, the principle that pneumonia is different in type at different times; and he explained that varying degrees in strength, or various complications, might exist in cases; but this was no proof—though it might be taken as such—of change of type. Dr. Sieveking's facts were insufficient: and it would be well that Dr. Sieveking should base his observations on at least 100 properly recorded cases. Dr. Richardson's recent exposition of the value of bloodletting in disease was commented upon, Dr. Bennett objecting to the diagnosis of the ancients, which, being inaccurate, would introduce an element of uncertainty into the observation of the effect of remedies. The ancients, also, the author contended, believed that if symptoms were relieved, the disease was also relieved. There was, indeed, no confidence to be placed in these views and statements, from the fact that they did not understand the relationship of symptoms. Dr. Bennett claimed for the modern physician more than the power to arrest symptoms,—to treat the disease on which the symptoms depended. In former times, when venesection was resorted to, 1 in 3 recovered, and the convalescence was regarded as evidence of successful treatment. Now, under the adoption of the "restorative plan," 1 in 27 or 30 only died, as shown by the details of large numbers of tabulated cases. He objected to that kind of medical writing in which plausibilities are supported by the narration of a few successful cases. Dr. Bennett concluded with the following axioms (briefly stated):—1. That the great end of treatment was to remove the consolidation of the lung, and to restore the organ to its normal state. 2. All that diminishes the vital strength should be avoided. 3. There is no relation between the violence of the symptoms and the fatality of the disease, though the young are attacked most. 4. A weak pulse, or want of reaction, the non-disappearance of the solidification, flagging heart action, &c., were bad symptoms. 5. Low diet, too much or too early exercise, the use of purgatives, expectorants, and other lowering measures in convalescence, are bad. 6. In double pneumonia, with such special symptoms as severe dyspnœa, small bloodlettings might be used with advantage. 7. Local pain should be relieved by large poultices. 8. The true disease was hepatisation; this was removed by the transformation of the solid material into pus, its liquefaction, its part absorption into the blood, and its evacuation through the excretory organs. 9. These events were favored by the restorative plan, and diuretics during the progress of disease. 10. The same pathological considerations and contingent treatment should be had regard to in all cases, complications being met by special means. Altogether, Dr. Bennett had observed in his own wards 153 cases; of these 129 were simple, and 24 complicated, cases (at least this is what we understood): of the 129 cases, all recovered; of the 24, five died. That is, out of the total, 1 in 30 3-5 died; in simple cases the amount was *nil.*

In the discussion which followed, Dr. Richardson said he did not consider that Dr. Bennett had touched the point which he urged in regard to bloodletting. He never advanced for a moment the doctrine that all cases should be bled, and at any stage. He believed that in the early stage of disease, when there was intense congestion, great heat of surface, &c., venesection did good. He had seen it, and maintained it still. Dr. Bennett's admission of the beneficial effects of venesection occasionally, considerably undermined the whole basis upon which the restorative plan was founded, and was a weak point in Dr. Bennett's doctrine. He also differed as to the statement that the relieving of symptoms was no relief of the disease.

Dr. Symes Thompson, Dr. Day, and others took part in the discussion, and generally agreed with Dr. Richardson. The general feeling seemed to be that it is impossible to tabulate a large number of cases of pneumonia, and treat them upon one plan, without reference to considerations of temperament, season, age, vigor of body, and the like.

PATHOLOGICAL SOCIETY OF LONDON.

There was no very striking morbid specimen exhibited at the meeting of this Society, save that shown by Mr. De Morgan. Early in the evening, Dr. Beigel brought under the notice of the fellows a child a year old, who had suffered from fits, and upon whose surface a number of flattened and sessile warty outgrowths had rapidly developed; the face, the arms, and the legs exhibited little fibrous buttons, varying in size from a split-pea to nearly that of a shilling. The exhibitor proposed to call the disease papilloma, but Dr. Tilbury Fox objected altogether to the introduction of a new name into dermatological nomenclature, believing that the condition in question was included under verruca. Dr. Bristowe presented a specimen of strictured gut, which he thought must have taken origin in an intussusception. A case of atrophied spleen in connexion with lymphomatous growths about the abdominal viscera was shown by Dr. Church. Dr. Moxon, after exhibiting a case of recurrent "testicle" cancer, as he termed it, drew attention to a cause of facial paralysis, which he had discovered in a man suffering from Bright's disease —viz., extravasation of blood in the canal of Fallopious. Dr. Dunn followed with an example of unequal development of the two sides of the cerebrum in an idiot child, begotten by its parent when insane. The most interesting case of the evening was one of recurrent cystic sarcoma exhibited by Mr. De Morgan, who doubted whether some of the cases in which cancer and cartilage were said to occur together were cancerous at all. Mr. De Morgan argued that too much stress was laid on recurrence as indicative of cancerous disease. He also declared his belief that the cystic formation in such a tumor as that which he brought before the Society was due to the softening down of the cartilage which constituted the original tumor. The disease, in the present instance, was freely disseminated, especially in the lung; and Mr. De Morgan affirmed that it, as well as cancer, was transported from a local source originally, and that its ubiquity, to use a convenient term, was not to be accounted for by any original morbid condition of blood; and in this view he was of course supported by Mr. Moore. One point of practical importance was necessarily urged,—viz., the propriety of operating for recurrent tumors at the very earliest date, and in such a manner as to get away all infiltrating material. Mr. De Morgan's position was assailed by Mr. T. Smith, who wished to be informed what is the evidence of a true blood-disease if a cancer is not; and declared that if cancer and its allies were local, the results of the practice of Mr. De Morgan, and of those who thought with him, should differ very widely from those attending the practice of other surgeons: cases of early removal should exhibit no return of disease. The discussion was not prolonged beyond the offering of a few remarks by Dr. Moxon, to the effect that there was some influence often at work by which particular tracts of tissues were selected as the seat of cancerous disease —for instance, the bony structures. The last-named gentleman somewhat startled his hearers by drawing attention to what he believed to be "Pacchionian bodies" in the liver, produced, as the result of congestion, in the form of flocculent outgrowths; which seemed, by the way, to be merely the remains of the deposit accompanying ordinary inflammatory action.

Dr. Quain, the President, referred, on taking the chair, to the loss the Society has sustained in the death of Mr. Bruce, whose career was brought so sadly to an end at the very moment when his work and training were giving promise that he would take a foremost position among the distinguished surgeons of the day.

An interesting subject was discussed during the first part of the meeting,—viz., that of the pathology and etiology of the morbid conditions found in what is now generally known as the "miner's lung." Dr. Headlam Greenhow introduced the question, and based his remarks upon a series of specimens which he sent round the room, and which illustrated the so-called "interstitial pneumonia" produced by the continuous inhalation of minute particles of soot, dust, or metallic substances. He attributed the pigmentation in the miner's lung to the introduction of sooty particles, as explained in our columns not long since. Dr. Moxon did not gather from Dr. Greenhow's statement whether he thought all the pigment found in the lungs was foreign, and introduced in the shape of dust or smoke. He mentioned the almost constant presence of pigment around emphysematous air-cells on the intercostal surfaces of the lungs when there was little other pigment, and also the pigment about old miliary tubercles probably due to hæmatoidin. He had seen the crystals of hæmatoidin in such pigment, and asked for an explanation of the remarkable fact that the interlobar surfaces are much less pigmented than the more exposed surfaces of the lung. Dr. Wilson Fox considered it as proved by recent researches, and particularly by Zenker's, by the cases then before the meeting, and also by some of Freidreichs', whose ultramarine dust was found in the lungs, that pigment in these organs could be derived from external sources. He considered it, however, as equally certain that much melanotic pigment in them was due to changes in effused hæmatin. In proof of this he need only allude to the changes in tint and appearances of the sputa during the progress of acute pneumonia, and also to the zones of pigmentation surrounding tubercles when crystals of blood pigments could not unfrequently be found; and he thought it possible that when pigment was found after the inhalation of non-colored particles, as in the flax dresser's lung, it might be due to this latter source. There was another point in Dr. Greenhow's cases which he thought deserved attention, and that was the character of the affection thus induced. He thought it remarkable that, in proportion to the number of persons exposed to the inhalation of these irritating substances, the cases where consolidation of the lungs was induced were comparatively few, and he thought it possible that in these cases some additional element was present, rendering the lungs specially prone to consolidation. This might prove in many cases to be due to the tubercular diathesis, the formation of tubercles being induced by the direct effect of the inhalation of these irritating substances. The fact that the lungs were in many such cases found to be extensively fibrous did not disprove this hypothesis, for fibrous change was one of the most frequent terminations of tuberculosis in the lung. His own opportunities of observation in these lungs had been comparatively very limited, but in some of Zenker's cases there were undoubted tubercles present. Dr. Bastian objected to the term "interstitial pneumonia" used by Rokitansky, and retained by Dr. Greenhow, since in many cases there were no evidences of inflammatory changes, but only those of the nature of cirrhosis. What seemed to have taken place in Dr. Greenhow's cases was an overgrowth of the fibrous tissue of the lung, the proper tissue being replaced by a new growth; indeed, the disease was "fibroid substitution." How brought about, it was difficult to say. Dr. Bastian objected to the use of the term "chronic inflammation," as applied to many pathological states of other organs in which fibroid induration occurred. Dr. Greenhow, in reply, defended the use of Rokitansky's designation. He could not find that the pigmentary substance was chemically allied to blood products, but he allowed that there might be some constitutional condition predisposing to the occurrence of the disease.

This discussion was followed by the exhibition of an enlarged thyroid by Dr. Semple, and of two large portions of bone expectorated by a patient of Dr. Morell Mackenzie at the London Hospital, suffering from syphilitic ulceration of the throat; the pieces of bone were portions of the transverse processes apparently of the second and third cervical vertebræ. The patient improved by the use of iodide of potassium, the wound healing. Dr. Mackenzie exhibited also the morbid parts in a case of epithelial cancer, with ulceration at the orifice of the œsophagus, detected at an early stage, when the symptoms were few, by laryngoscopic examination. Dr. Langdon Down then handed to the President a microcephalic cranium of peculiarly small dimensions, the sutures of the skull being very distinctly marked. The specimen, Dr. Down thought, disproved Virchow's hypothesis of the origin of the microcephalic crania, and he brought forward the specimen on that account. A full description was next given of a double fœtus—Siamese-like, in fact—by Mr. Pick. Two very interesting cases, in a clinical as well as pathological point of view, were then submitted to the meeting by Dr. Murchison. The first was that of obstruction in the intestine by a gall-stone, which was of large size, and had found its way through the fundus of the gall-bladder into the intestine. The second was an instance of pyæmia secondary to ulceration in the gall-bladder, produced by gall-stones; and what was curious about the case was this, that there was no rise in the temperature.

Dr. Dickinson, at the end of the allotted time, showed the parts from a case of cerebro-spinal meningitis; but before this, Mr. Birkett described a case of stone of very unusual character, which is of special interest to surgeons. Mr. Birkett was called to see a man at Stamford-hill who was dying of peritonitis, and who had been always hearty, save that there was a vague history of stone at the age of about sixteen. The man was unusually reticent about himself and his affairs, and any information that was obtained his friends gave. The patient for several days had experienced some difficulty in urinating, and his medical man had, by introducing a finger into the rectum, felt something that seemed to be like an exostosis. Mr. Birkett made out, by the aid of a bougie, that there was a calculus present at the neck of the bladder, but it was immovable when felt per rectum by the finger. It was at length ascertained, on close inquiry, that the patient was in the habit of "leaving the room" several times a day and passing water by the rectum; but it was not clearly made out till after his death (at the age of forty-nine) that he had suffered from stone in early life, and that two surgeons at Dudley had proposed to "cut" him Mr. Birkett, it should be said, did not see, as the patient was *in articulo mortis*, that any good could be done by operation, which would have been easy. At the post-mortem, the stone was found to occupy the prostate and part of the membranous portion of the urethra, being tightly wedged under or against the pubic arch, in consequence of the existence of a notch at its upper surface. The bladder was healthy, save that there were two openings close to those of the ureters, communicating with a cyst-like pouch, that opened again by a single aperture into the rectum. How these openings came Mr. Birkett did not know. He did not think that the calculus had been formed in the prostate, because it existed at an early age. Mr. Maunder suggested that the openings through the base of the bladder were due to the fact that the original stone or stones had passed through to the rectum, and that the stone found by Mr. Birkett was, in reality, a prostatic calculus formed late in life. Possibly, Mr. Birkett thought, some additional particulars might be obtained from the friends to clear up the doubtful points as to the origin and eage of the ston which he had found.

CLINICAL SOCIETY OF LONDON.

Dr. Greenhow in the Chair.

Dr. Broadbent read a communication "On the Treatment of Anæmia and Chlorosis with Manganese and Nickel." Proceeding on the assumption that all closely allied substances have analogous therapeutical actions, and that manganese and nickel are chemically closely allied to iron, and on the fact that iron is generally admitted to be an effectual remedy in the disorders above mentioned, Dr. Broadbent determined to ascertain by experiment to what extent the salts of the other metals could be advantageously employed for the same purpose. Several cases were related, in some of which the results were negative, and in others favorable. In one case the sulphate of manganese, in others the chloride, was employed, the salt being usually combined with quinine, or some other bitter.

Dr. Greenhow read an account of a case of "Tabes Dorsalis." The patient had suffered from nervous disorder for five years. The more important symptoms during the two years he was under observation were the following: — 1. Impaired tactile sensibility of the area of distribution of the dorsal spinal nerves from the third to the tenth, and of the distal two-thirds of both upper limbs, especially of the surface parts supplied by the ulnar nerve. 2. Lancinating pains, referring to all parts of the body below the root of the neck, unattended with spasm. To these the patient had been subject, without intermission, for many months. 3. No impairment of co-ordination of voluntary movement; twitching contractions of the flexors of the hand, which could be controlled by voluntary effort; wasting of the muscles of both hands, especially the right. 4. Contraction of both pupils, excessive of the right, moderate of the left; double vision of objects at distances either greater or less than five feet; the image of a near object seen by the right eye being to the left of that seen by the left eye. Ophthalmoscopic results negative, or nearly so. Dr. Greenhow believed the case to be unique in the limitation of the affection to the upper part of the body, and in the consequent absence of any disorder of locomotion. He thought the symptoms to be referable to disease of the posterior columns, of the same nature as that which exists in the ordinary cases of locomotor asynergy, but differing from them in being limited to the upper part of the cord.

A report on this case, by Dr. Buzzard and Dr. Moxon, was then read. Considering that the most characteristic symptoms of tabes dorsalis may be comprised under the heads of ubiquitous shooting pains, anæsthesia, ataxia, and disorder of the eye; and that, although in most cases all these groups of symptoms are present, some of them are occasionally wanting in cases which are found to be due to lesions of the same kind as those found in locomotor ataxy, — the reporters were of opinion that in this instance the absence of the prominent feature, to which the disease owes the name conferred on it by M. Duchenne, ought not to be regarded as a reason for excluding it from the class of cases comprised under the term tabes dorsalis.

Mr. Holthouse, after relating a case of Subglossitis, which he believed to be an affection of rare occurrence, remarked that its peculiar features were, an absence of enlargement and protrusion of the tongue, and of all symptoms of dyspnœa; the swelling being limited to the subglossal region, there was no inflammation of the salivary glands. Supposing some slight injury had been sustained by the mucous membrane of the floor of the mouth, the subsequent mischief might have resulted from blood-poison introduced through the wound. Treatment was essentially tentative. In the present instance the symptoms rapidly subsided upon the use of quinine, but the value of this remedy could not, of course, be determined by a single case.

HÆMORRHAGIC PHTHISIS.

The very important and interesting subject of the influence of hæmoptysis as a cause of inflammatory processes, and of phthisis in particular, was brought under discussion. The queston was introduced in an able paper by Dr. Hermann Weber, who referred also in detail to the question of the treatment of hæmoptysis. Dr. Weber, after referring to a communication lately made to the Society by Dr. Bäumler, described three instances of hæmoptysis followed by inflammatory processes. The points of analogy in all of them were, that the subjects were men apparently in good health, but predisposed to epistaxis, and they offered no signs of pulmonary disease at the time when they were seized with hæmoptysis; that only several days after the occurrence of the latter, symptoms of bronchial irritation and lobular pneumonia, with pleuritis, manifested themselves, attended by a corresponding degree of fever. In two of these cases the disease terminated in gradual, but perfect, recovery; while in the third, during the apparent process of recovery, fresh attacks of hæmoptysis took place, again followed by fresh inflammatory changes, and later by another attack of hæmoptysis, leading to immediate death by suffocation. The post-mortem examination exhibited no tubercles, but caseous masses of different ages, surrounded by inflammatory infiltration, and dispersed over different parts of both lungs. The ages of the caseous nodules apparently corresponded to the different dates of the attacks of hæmoptysis; the bronchi and air-cells were partly filled with fresh coagulated blood from the last fatal hæmorrhage, but a large bronchus was filled by an old, partly discolored coagulum, softened in the centre, and resembling a venous thrombus; some of the old caseous nodules exhibited central softening, and the commencement of the formation of cavities. The author regarded this last case as an instance of a kind of galloping phthisis, caused by the retention of blood in the bronchi and air-cells, and by the changes effected as well in the effused blood as in the surrounding tissues. Dr. Weber considered the inflammatory changes in the two other cases, terminating in recovery, as essentially analogous, as, under unfavorable influences, they might have likewise led to phthisis. He pointed out that this had been the general view until Laennec and his successors had taught that hæmoptysis was almost always the consequence of already existing tubercular changes in the lungs. He thought it was impossible to interpret the cases on Laennec's view, and that much credit was due to Felix Niemeyer for re-establishing the old Hippocratic view. After having mentioned that in many instances hæmoptysis was not followed by any inflammatory changes, owing to the blood having been more or less completely expelled, he alluded to the irritating influence frequently exercised by the retention of other pathological substances (pus and similar morbid excretions) in the lungs. He then made some remarks on the treatment of hæmoptysis, regarding perfect rest as the most important element, and in many cases sufficient to check even severe hæmoptysis. Amongst the remedies not generally used he placed great value on ergotin in rather large doses, administered either by the stomach or by subcutaneous injections, and to the emetic effects of which he attributed the twofold advantage of arresting the hæmorrhage and of clearing the bronchi. Dr. Weber further recommended a prolonged residence in elevated regions in cases characterised by a tendency to hæmoptysis, remarking that experience had amply shown its beneficial effects, and had disproved the views that a moderate decrease of atmospheric pressure favored the occurrence of hæmorrhage from the mucous membranes.

Dr. Andrew Clark, in an admirable and really eloquent speech, approved of the contents of the paper, and stated that it was high time to modify the still prevalent views on phthisis and tuberculosis. He would designate the cases mentioned as instances of "hæmorrhagic phthisis," other forms as "pneumonia," and others as "fibrous phthisis," according to the nature of the pathological processes. He mentioned in his remarks that the blood retained in the lungs would also, without leading to any inflammatory processes in the neighborhood, by changes connected with its own disintegration, lead to the formation of cavities and phthisis.

Dr. Douglas Powell alluded to a fatal case recently examined by him, in corroboration of the view that blood retained in the lungs after an attack of hæmoptysis could be the source of inflammatory processes in the surrounding tissue; and remarked that the changes in the cases observed by him had occurred principally in the lower lobes.

Dr. Buzzard wished to know in what manner the watery extract of secale had been employed hypodermically in cases of hæmoptysis.

Dr. Hermann Weber, in replying, seemed to doubt that the mere disintegration of clots of blood retained in the lungs could lead to the formation of cavities without causing inflammatory changes in the neighborhood. With regard to the doses of the extract of ergot, he stated that he was in the habit of giving from twenty to thirty grains of the liquid extract of the Pharmacopœia every two or three hours, and that for hypodermic injections two or three grains of the watery extract had been used dissolved in equal parts of glycerine and spirit. He availed himself of the opportunity to direct attention to an important communication by Professor von Langenbeck at Berlin, on the treatment of aneurisms by hypodermic injections of ergotin.

Mr. Myers and Mr. Holmes Coote related cases of the occurrence of secondary syphilis following soft chancre.

EPIDEMIOLOGICAL SOCIETY.

The history of the recent epidemic of cholera in Persia was the subject of a paper by Dr. Dickson of Constantinople, read before this Society. The author has compiled from official sources a host of chronological and topographical data relating to the epidemic, but these must needs be studied with the aid of a map. The paper is a most valuable contribution to our knowledge of cholera. The facts mentioned by Dr. Dickson pointed to importation as mainly explaining the origin and spread of the disease. Dr. Lawson drew attention to the coincidence in point of time between the occurrence of cholera in Persia, India and China in 1867, as indicating that there was some general influence at work independently, and of more activity, than importation. Dr. Goodeve pointed out the apparently increasing tendency of cholera to become endemic in countries nearer and nearer westward, remarking that this was a reason for the adoption of a vigorous system of preventive sanitation in Europe. Dr. Dickson commented upon the utter neglect by the Persians of such sanitary measures; and Drs. Gavin Milroy and Goodeve reproached the Persian Government for this fault. The Persians are, in fact, completely indifferent to the removal of those conditions of uncleanliness and foulness which court the development of cholera. So long as a *cordon* is drawn around an infected district, the authorities are contented, it seems to do nothing more. Subsequently to the reading of Dr. Dickson's paper, Dr. Gavin Milroy detailed the opinions of the Rev. Mr. Berkeley on the relation between epiphytics and epidemics. It seems that, beyond the fact of their coprevalence, little is known to the botanists. Indeed, the subject of epidemic epiphytism is an unexplored field. We noticed this particular subject a while ago. By the way, it was stated by Dr. Dickson in his paper that the Persian Government had recently established a Department of Public Health, to watch over the occurrence of epidemic disease, and to advise as to its prevention. It may be fully impressed with the potentiality of sanitary legislation from what has been done in Europe.

Editorial.

THE FRENCH AND ENGLISH HOSPITAL SYSTEM.

The Reports on French Hospitals, by Mr Blanchard Jerrold, which are now in course of publication in our columns, would not fail at any time to be of great interest to the profession and to the public. At the present conjuncture, however, they are of very special value and importance; because they enable us to institute a comparison between the French and the English systems, cr, more correctly, between London and Paris, in the matter of hospital management. It may serve to afford some evidence of the wastefulness of the London system if we compare the mere numbers of the patients relieved; and especially when we remember that this relief is in Paris a reality to the poorest and the most retiring, and that no one there could die, as people die with us, from the want of absolute necessaries of life. We shall not be far wrong if we set the population of Paris at about one-half that of London—say at 1,500,000 souls; and of this number, 175,656 persons received medical relief, either at home or in hospital, during the year 1867. If we take into account that this includes what is equivalent to our parochial medical service, and if we then consider that, according to *The Times*, 1,800,000 persons were hospital patients in London during 1866, we shall form some idea of the amount of voluntary beggary that our reckless flinging abroad of gratuitous assistance has created. It has been objected to *The Times'* estimate that it was too high; and that it would be invalidated by the fact that in many hospitals the same patient does duty for several in the returns. But even if a few hundred thousands, or say half a million, were on this ground struck off from the total, the residue would still be something appalling. It is almost as bad to provide gratuitous medical attendance for nearly half the population, as for four-sevenths of them. But, in order to put the matter in a strong light, we have supposed that the 1,800,000 is made up by every individual of one-half of the hospital patients in London being counted six times over. Such a calculation would reduce the true number to rather more than half a million—to rather more than one in six of the population—to 514,286, *without* including the operations of the parish doctor. *Including* what is equivalent to these, the Paris number of 175,656 amounts only to one in eight and a half of the population.

In the last number of THE LANCET, Mr. Jerrold has described the Paris arrangements for hospital admissions and dismissals. We need not reproduce what most of our readers have, doubtless, made themselves familiar with; but we must beg of them to recall or to refer to the description, and then to contrast it with their own experience in London. Here we may see a miserable woman, whose husband is stricken down by acute rheumatism, and whose children are crying for bread, hurrying through the streets, shivering and bedraggled, from one counting-house to another, to beg for a ticket for the hospital. She has to run also to wait upon the relieving officer, or the board of guardians, at the precise moment when her name is bawled; and to keep another tryst at the house of the parish doctor, waiting for the medicine to be given out. In the meanwhile the sick man is untended, and the children are crying for food. At length, perhaps, the hospital ticket is procured; and then the last bed, or the last bit of decent clothing, is pawned to pay for cab hire. Perhaps the man would have been admitted instantly, as an urgent case, if he had been brought earlier, and without a ticket. But this is not known to those whom it concerns. The classes who ought to benefit have learned to regard the hospital, except in case of accident, as a place, not for the poor, but for the *protégés* of the rich—for the families of men in regular work under subscribers, and so forth.

In Mr. Jerrold's admirable description, more prominence might have been given, we think, to the organisation of the Central Bureau, and to the efficient manner in which the medical officer there on duty distributes the applicants to the institutions best adapted for their several conditions. So completely is this done, that medical practitioners who wish some poor patient to try some particular form of treatment—such as medicated baths or galvanism—have no difficulty in getting the patient sent, for the specified purpose, to the hospital at which the necessary appliances are in the best condition. But the great fact is, after all, that the poor Parisian regards the hospital as the home and refuge of the sick—not as a place accessible only through private benevolence, or by dint of unblushing importunity.

It is impossible to draw the contrast of which we have spoken without feelings of humiliation. We hope the time is not far distant when some approach to the Paris system will be seen amongst us; but we cannot at present hope to introduce it as a whole. We have too much demoralised our poor by casting abroad money in the very insolence of wealth, and by depriving them of the human element, of the discriminating personal kindness, that is essential to real charity. In our hospitals, thousands and thousands of people in receipt of liberal wages are constantly treated without charge for trivial or imaginary maladies, and the time devoted to them is taken from those who have real claims to attention and to care. Our government by boards is radically wrong and bad. A board feels no sympathy and excites no gratitude. The human element in hospital administration is supplied by our own profession alone, and is supplied even by its members imperfectly, because they feel a dissatisfaction with much of the work that falls to them to do. We need reforms in England that shall have a fourfold action. We want to see the London hospital become, to the poor man stricken down by sickness, all that it now is to the poor man stricken down by accident. We want to see a large element of non-medical human sympathy imported into its receiving-rooms and its wards, by men who will assure the sufferer that those dearest to him are not undergoing privations in his absence. We want to see such central control as may prevent the waste of money in supporting unnecessary hospitals in unsuitable buildings, and in struggles for support by advertisements. And last, but not least, we want to see the suppression of that system under which, while the poor and suffering are too often practically excluded, the medical profession is called upon to treat gratuitously thousands of sturdy beggars, whose claim for eleemosynary relief is simply an impudent robbery, the success of which is demoralising to them and degrading to the medical profession.

◆

INFLUENCE OF NERVES ON INTRAOCULAR PRESSURE.

An interesting investigation, having a direct bearing on the predisposing and exciting causes of glaucoma, has recently been made by MM. A. V. Hüppel and A. Grünhagen, who have attempted to determine the influence of the nerves supplying the eye and its muscles on the intraocular pressure. In many cases of glaucoma, especially of the subacute or chronic inflammatory form, the eye, as is well known, becomes so tense that it feels like a billiard-ball, and the pressure exerted on the ciliary nerves is so great that they become incapable of transmitting ordinary sensations from the periphery; so that, although severe pain is experienced in the brow, nose, and adjoining parts, the numbness attains to that degree that the cornea may be touched without being perceived by the patient. Various causes have been assigned for this increase of tension in the globe in glaucoma. The majority of authors have, with V. Graff, regarded it as an inflammatory affection, and have referred the increased tension to exudation of serous fluid. Donders, however, holds that inflammatory symptoms are not a necessary concomitant, but that it is primarily due to irritation of certain vaso-motor nerves, which, acting on the vessels, influences the amount of secretion normally taking place within the eye; on which view the inflammatory symptoms are altogether secondary and accidental phenomena. Wegner some time ago endeavored to obtain some definite information on this point, and believed he had shown that irritation of the sympathetic, which produces contraction of the vessels, occasions ex. exaltation of the intraocular pressure. His conclusion, however—which, on the face of it, seems at least doubtful,—is not corroborated by the observations of MM. Hüppel and Grünhagen. The experiments of these gentlemen were chiefly performed on cats, placed under the influence of woorara, and kept alive by artificial respiration into the eyes of these animals the extremity of a canula, with a mercurial monometer attached, was thrust. The ordinary amount of intraocular pressure was found to be about equal to a column of mercury of from 22 to 24 mm. in height (nearly one inch). They found that irritation of the third nerve only influences the intraocular pressure by causing contraction of the recti and obliquus inferior, but this influence was sufficient to elevate the pressure from 24 to 70-90 mm. Irritation of the branches supplying the sphincter iridis and ciliary muscle exerts no influence. Excitation of the cervical sympathetic is followed by two opposite effects — a primary exaltation of pressure and a secondary diminution. The former effect, which amounts to from 1 to 6 mm., they regard as due to the contraction of the orbital muscle, since it is not observed if the eye be removed from the orbit, or even be gently drawn forwards —nor after death; though in all these instances extreme dilatation of the pupil occurs. Its non-occurrence after death, when the eye is *in situ*, may reasonably be explained by the rapid retirement of the blood from all the vessels, which would counteract the effect of the muscular contraction. They were never able to observe any contraction of the choroid when examined through a small opening in the sclerotic. The secondary action of the sympathetic is sometimes the only one observed, which, effecting a diminution of the intraocular pressure amounting to from 9 to 10 mm., the authors, in opposition to the view of Wegner, regard as due to the contraction of the ocular vessels. That a close relation does exist between the blood pressure and the intraocular pressure is clearly shown by the immediate subsidence of the latter to the extent of 10 mm. when a ligature was applied to the carotid, and immediate augmentation to the extent of from 30 to 80 mm. when pressure was made on the abdominal aorta.

Hence it would appear that neither the third nerve nor the sympathetic is essentially implicated in the production of glaucoma. On the other hand, several points indicate the participation of the fifth nerve in the development of this disease; for elevation of the pressure was observed on excitation of the medulla oblongata, amounting in one instance to no less than 200 mm. of mercury, or eight times the normal amount; and this condition lasted for a considerable period even after death. The experiment succeeded after instillation of atropine and section of the sympathetic, and in eyes on which iridectomy had been performed. Hence these observers give their adhesion to Donders's theory, and regard the essence of glaucoma as attributable to irritation of the fifth nerve, though it affords no explanation of the frequent inflammatory attacks which are concomitant. In conclusion, the authors are unable to furnish any explanation of the curative effects of iridectomy, since the performance of this operation on healthy eyes was not followed by any perceptible diminution of pressure. It should be observed, however, that the experiments in ocular tonometry, recently conducted at Utrecht by Drs. Dor, Snellen, and Monsich, and by Prof. Donders, show very different results. These inquirers found that iridectomy was always followed by marked decrease of pressure.

Medical Annotations.

"Ne quid nimis."

PROFESSOR LISTER'S LATEST OBSERVATIONS.

There can be but one opinion as to the importance and interest of the observations of Professor Lister on the antiseptic treatment of wounds, or the ligature of arteries on the antiseptic principle. Whether surgeons accept Mr. Lister's conclusions or not, they must admit the candor with which he reports all details of his experiments, and the scientific strictness and severity with which he observes phenomena. His paper last week is far more than a mere contribution to practical surgery. It enlarges our ideas of life, and the extent to which the living tissues may be made to assimilate organic substances. And it is a perfect model of the way in which a practical art may be advanced by sound minute physiological observation. We have been accustomed to regard a ligature as a foreign body, more or less irritating, according to the material of which it consisted, but albeit a foreign body exciting suppuration, and only fit to be roughly removed by the surgeon. Professor Lister's experiments lead us to think of a ligature as capable of being absorbed as dead tissues are absorbed, or encapsuled as a metal bullet might be, or incorporated with the tissue of the artery. In the case in which the carotid artery in the calf was ligatured in two places, in one with strips of peritoneum, and in the other with fine catgut, a month after the operation, the animal having been killed, the ligatures were found to have been transformed into bands of living tissue. "The two pieces of catgut which had been tied round the vessel had become, as it were, fused together into a single fleshy band, inseparably blended with the external coat of the artery." The ligature of peritoneum was in like manner continuous in structure with the arterial wall. The organization of these ligatures, so evident to the naked eye, was confirmed by microscopical examination of what remained of the ligatures. Only one drop of pus escaped from the wound from first to last.

When we compare Professor Lister's results and conclusions, in regard to the antiseptic principle, with those of other surgeons, it is impossible not to be struck with the difference between them and him. The physiological phenomena described by him are something most unusual: almost entire absence of pus and of signs of inflammatory thickening, and the incorporation of ligatures used with living tissues, are results very different from the coarse and tedious processes of old surgery. But it will be objected they cannot be obtained by other surgeons. Be it so. All that we can say is that they are obtained by Mr. Lister, and that he attributes them to a refined and scrupulous carrying out of the antiseptic principle. He looks upon suppuration, putrefaction, and all the coarser processes in wounds, as resulting from the presence of organic germs, which he takes most unwonted pains to destroy by carbolic acid in various forms. We could wish that he had repeated his experiment on the calf, with all the conditions alike, excepting the antiseptic precautions. Still it remains true that Professor Lister has obtained results which are as novel as they are beautiful and important, and that he carries out the antiseptic principle in a way in which, as far as our knowledge goes, no other living surgeon or physiologist does, Lemaire not excepted. We commend his paper to the careful study of the profession.

VELOCIPEDES.

Some fifty years ago, vehicles of German construction with the above title appeared in England and became the rage. They obtained their name from being impelled by the feet with great celerity, the rider being seated astride, and striking the tips of his toes upon the roadway. Partly because of the numerous accidents which befell the riders and offered a fertile field to our old caricaturists, partly also because of the great wear and tear of shoe leather which it necessitated, and partly also because of the physical damage which it was sometimes supposed to inflict upon the rider, the velocipede, or hobby-horse (as it was sometimes called), gradually went the way of most novelties, and disappeared. Since then, various but comparatively unsuccessful efforts have been made from time to time to introduce a locomotive machine worked by the feet of the rider. These have generally consisted of four or three wheeled carriages, the large hind wheels of which were turned by cranks acted upon by treadles. Within the last few years, however, the movement has taken on a remarkable development, and, in France and America especially, velocipedes have become an established institution. Their present form appears to be a great advance upon the old invention. We need not attempt to describe in detail the construction of the carriage, for it is quite certain that in a few days or weeks they will be common enough in this country. It is sufficient to say that the rider, seated upon a small leather saddle, balances himself upon a carriage which has only two wheels, the one in front (the driving wheel) being much larger than the other behind it, which moves in the same vertical plane. The rider turns the driving wheel by means of his feet, which are placed upon pedals moving small cranks attached to the axis of the wheel. This wheel can be turned to the right or left by means of a horizontal bar, with handles at its extremities for the hands of the rider. The hind wheel can be fixed at will by a skid brought to bear upon it by an ingenious mechanism. The speed attained by these machines in France has been as high as seven miles and a half in half an hour, and there seems to be no doubt that ten or twelve miles an hour is easily accomplished. We have lately had an opportunity of examining velocipedes and seeing them in use. Our attention was especially directed to the character of the muscular exercise, and the degree in which the use of this carriage might be open to the charge which was freely brought against the old velocipede, of inducing hernia. So far as our investigation went, the results were very favorable. It seemed to us that the muscles of the body generally, not those of the lower limbs alone, were brought easily into play, and the mode of locomotion promised a very agreeable method of taking useful and healthful exercise. The position of the body and the mode of using the legs do not seem likely to pro duce that violent action of the abdominal muscles which was necessitated by the old velocipede, and which was liable to cause protrusion of the intestines. We should, however, add that the exercise, like all gymnastic feats, requires for safety that it should be carefully regulated, that a high rate of speed should only be gradually acquired, and that great efforts should be studiously avoided. With these limitations, we cannot see any probability of danger to health in the employment of the velocipede. No doubt it is best fitted for the young and active, for very few learners escape a considerable number of falls, which are not easily borne by those in whom age has diminished the elasticity of the frame. Indeed, the most ardent velocipede riders (and the pursuit has become quite a passion in France) do not recommend it with any earnestness to those who have passed forty years.

THE REPUTED CURE OF SNAKE-BITE.

The very gravest doubts have been thrown upon the asserted efficacy of the "ammonia" treatment of snake-bite, by Dr. Fayrer, the professor of Surgery in the Medical College of Bengal. This gentlemam has recently injected into the veins of a dog bitten in the thigh, by a fresh, full-grown spectacled cobra, a solution of strong ammonia, as directed by Professor Halford; in addition, he exhibited another dose by the mouth. In 44 minutes and 15 seconds the dog died. Similar results were obtained with pigeons. Dr. Fayrer says that death is rather later than usual in those cases in which ammonia is given, perhaps; but the benefit of the drug is very small, though further experiments may show that, given in larger and freer doses, it may be of service. Dr. Fayrer has performed the exact experiment which we wished,—that is to say, he has applied the antidote to the case of the bite by a known and highly poisonous snake. There were doubts in Professor Halford's cases as to the exact degree of venomous power of the snakes which had bitten his patients. A fair bite from a fresh cobra is known to entail certain death, and the possession of the power on the part of a remedy to prevent evil consequences is at once the best proof of its antidotal qualities. Dr. Fayrer has likewise experimented with the antidote in the possession of a servant of Colonel Showers, to which we recently referred, and finds that it is utterly useless.

Odd Papers.

THE SICK POOR OF PARIS.

By Blanchard Jerrold.

No. III.

HOSPITAL ADMISSIONS AND DISMISSALS.

Two incidents have been lately described in the Paris papers, which dispose of the popular idea that the hospital ward is as open to all as the highway. There are difficulties; for we have the story of a poor sick *concierge* carried half round Paris from hospital to hospital, and finally borne back to the miserable home in despair. The sick *concierge* had one advantage over the sick London pauper, however; he was carried in a comfortable litter, for litters are always held in readiness at the Maisons de Secours. When a poor sick person is to be removed from home to the hospital, men from the Maisons de Secours of his quarter repair to the sick bed, and effect the removal upon a decently tented litter; so that if the case be a grave one, and the least disturbance of the patient to be avoided, he is not distressed in the least. Bed and patient are borne away together. Strangers in Paris must have often observed melancholy processions of poor relatives following a litter carried by two hospital or Assistance men, threading their way along the crowded boulevards, or through the narrow streets that only a few years ago led to the Hôtel Dieu. Sometimes sisters of charity—skilled, zealous nurses of the poor—are in the wake of the litter.

I have described the out-door sick relief. Let me now touch upon the new regulations which M. Husson issued in April, 1867, for the admission of patients to the Paris hospitals, and for their discharge. In his address to the governors of the hospitals, the Director recounts how he has been often under the necessity of dwelling on the precautions which are requisite in the admission and discharge of patients; and one or two recent incidents of improper rejection of applicants prove that either the regulations are not perfect yet, or that they are misunderstood.

The basis of all the laws for the admission of patients to French hospitals is contained in a ministerial circular which was issued as far back as June 31st, 1840. By the terms of this circular, the administrator on duty is responsible for the admission of poor patients, "guiding himself as far as possible by the advice of the doctor on duty." The director of the Assistance, and his representative directors located in the hospitals, are responsible for the admission of patients. The doctors are advisers simply. Urgent cases are under a special law, the hospitals being divided into general and special establishments. The directors are bound to take care that even the urgent cases are remitted to their proper hospital. Patients who apply for admission to a hospital must, when their case is not urgent, direct their application to the central office of the Assistance. If the case of an applicant be such that his admission to some establishment is urgent, and there is no room in his proper hospital, he is sent to the nearest establishment, provided always that his transfer and the necessary delay in treatment will not prejudice his case. When the urgency of the case is evident, and the patient requires immediate treatment, and has been sent from a first hospital for want of room in it, he can on no account be refused at the second. The authorities are bound, at any inconvenience, to provide a bed and attendance for him. In cases of accidents, the hospital must provide for the immediate relief of the case presented, whatever its condition may be. Beds must be rigged up in any corner if all the wards be full. They are over-full sometimes. At the Lariboisière, a few days ago, I noticed one ward with supplementary beds packed close together. In short, I repeat, the accident cases must be admitted to the nearest hospital, whether it be a general or special establishment, or whether the sufferer be old or young. As the law says, regulations and classifications disappear before the unfortunate exigencies of humanity. Before 1856, the commissaries of police often threw the administrators of an hospital into confusion by sending sick persons, or persons feigning sickness, with orders that they should be instantly admitted. In this way the regulations of the Assistance were broken through, and very often decrepid men and women or false invalids — cases for the Hospice or the Depôt de Mendicité—were foisted upon the hospital authorities. A circular of the prefect of police put an end to this conflict of authority in October, 1856, and thenceforth the cases sent to the hospital by the police were subjected, like any others, to the regulations of the Assistance. In the case of old or decrepid people, the hospital authorities are bound to direct the friends of the sufferer in the forms necessary to his admission to the asylum open to his case. The function of the police commissary, when he knows that there is a case of dire distress or sickness in his quarter, is to report it to the director of the Assistance, that it may be at once attended to. In consequence of this harmonious action of the police with the Assistance authorities, it is impossible that cases of death upon bare boards, or from neglect of parish officers, should occur in Paris. When I asked M. Husson whether death from starvation or death from medical or Assistance neglect were possible within his jurisdiction, he answered, that it could occur only through the neglect, the almost inconceivable neglect, of friends and neighbors. Any person taken ill in the street must be admitted, if the case requires it, to a bed in a hospital, and the police are bound to carry the stricken person thither.

In his new circular, M. Husson draws the special attention of hospital doctors and administrators to the strict line of duty which they are bound to observe in all cases of illness in the public streets, or of accidents. He warns them by two cases which had lately occurred. Two men were conveyed by the police to two hospitals, and both were examined and rejected. One died almost immediately afterwards in a guard house, and the other on his way to another hospital. M. Husson, while admitting that in each case the strict form of an examination had been complied with, suggests, and suggests as a warning for the future, that a sufficiently careful and complete diagnosis had not been made. And he requests that in similarly urgent cases the hospital authorities should be a little more patient, and keep the case, if only for a few hours, to watch it. "If," he says, humanely, "there should be no vacant bed in the hospital, put the sufferer in one of the consultation rooms for the moment." And here I find again evidence of that general spirit of kindness which tempers every department and every establishment of the Assistance—a spirit which seems to be exactly in unison with that which shone through all the enlightened efforts, for the consolation and reclamation of the poor, made by the late Count Rumford. In his essay on "Fundamental Principles of Establishments for the Poor," he observes that it appears "no body of laws, however wisely framed, can, in any country, effectually provide for the relief of the poor without the voluntary assistance of individuals; for though taxes may be levied by authority of the laws, for the support of the poor, as well to reclaim the vicious as to comfort and encourage the despondent, those demonstrations of concern which are always so great a consolation to persons in distress cannot be *commanded by force*. On the contrary, every attempt to use *force*, in such cases, seldom fails to produce consequences directly contrary to those intended." The Count insists throughout that effectual relief for the distresses of the poor, and the sovereign remedy for the numerous evils to society which arise from the prevalence of mendicity, indolence, poverty, and misery, among the lower classes; must be derived from the charitable and voluntary exertions of individuals. And these must be educated—of pure morals and of tender heart. But this theme is foreign to my present purpose; or I might show how, while we in England have utterly failed in reclaiming the tramp and the mendicant, because of the bad spirit of our laws on vagabondage, and of the hostile and cruel temper in which an exclusive society has dealt with those who are unfortunate rather than vicious, or at worst are only vicious because they have been unfortunate,—the kindlier, and at the same time more rational, code which sways mendicancy in France has almost as effectually cleared its streets and roads from hereditary vagabonds as Count Rumford swept the streets of Munich some seventy years ago. But before such a change shall come in England, a political reform that will advance men who know the poor to the government of the poor remains to be brought about.

A special rule is framed for the treatment of the epileptic and consumptive. The hospital administrator is directed, in the case of an epileptic fit, to receive the patient with the greatest care, to place him in a convenient room, and put a nurse to watch over him; and, under no pretext, to let him leave the hospital before he has so far recovered as to be able to reach his home in safety. Consumptive patients are admitted to the hospital only so long as there is hope that medical treatment may be efficacious; but the ordinary cases are treated by the Assistance doctors in the patient's own home. Should a poor creature in the last stage of consumption, without proper food or fuel or lodging, be presented at the hospital gates, the authorities are bound to throw them open; for, where there is no hope of recovery, remains the Christian duty; and a bed must be found and everything afforded that can give ease to the last moments of the sufferer.

The case of a sick man from the country, who applies at a Paris hospital, is specially provided for. The case is often that of an individual who has travelled purposely from his own province to the capital, to throw himself as a charge upon the Paris Assistance. If he is really sick and requires medical treatment, he is admitted; while the police adopt measures to have him returned to the department and commune to which he belongs. It has been found necessary to oppose with rigor the tendency of country patients to get to the Paris hospitals, since these hospitals are constructed to supply beds only to the sick poor resident in the capital. The same remark applies to the asylums, and to the aged and infirm. In special cases, where it is deemed necessary by the departmental or communal authorities to send a patient to Paris, the authorities of his locality are bound to defray the cost of his carriage and the cost of the Paris hospital bed; the latter being about two francs per diem. The patient himself is liable to defray this expense when he is able.

The new regulation with regard to strangers within the gates of Paris, is dictated in terms that do honor to that administrator whose heart and head are alike admirable. When a stranger falls ill in Paris, and the illness is serious, requiring immediate or prolonged treatment, M. Husson requires that they should be admitted to hospital comforts in conformity with the law of the 7th of August, 1851. The usual course is to communicate with the representative of their nation—with their ambassador or consul,—who is requested to discharge the very moderate hospital fees. But when the case is an exceptional one, or of particular interest from a scientific point of view; or, again, when the predicament of the patient is one specially worthy of sympathy, the Assistance accords an unconditional admission. M. Husson remarks, proudly: "The hospitals of Paris have always willingly paid a heavy tribute to science and to humanity by receiving and treating at great cost patients who had claims elsewhere, and none upon them; and they will never abandon this mission, although it entails an important annual sacrifice."

Remark, I pray, with how much care the director provides against anything like unpleasant or hostile meetings between police agents and hospital porters or door-keepers. These functionaries are directed to receive every application from police commissaries with politeness—with "*une bonne volonté marquée.*" In cases of controversy as to the admissibility of the patient presented after the preliminary examination by the house-student on service, the administrator can still admit the case, and afford any temporary relief he may deem necessary, even when the house-surgeon refuses to certify for it.

The foregoing are the regulations for the admission of patients to the Paris hospitals. Let us now glance at the regulations which govern the discharge of patients or their transfer to asylums. Of course the mass of patients are simply discharged on a certificate of convalescence signed by the physician or surgeon on duty. But there is a very important and at the same time troublesome class of patients—namely, the infirm: those poor creatures who are incapacitated by chronic disease or crippled. These are the patients, these and the aged, for whom the Salpêtrière, (for women) and the Bicêtre (for men)—the Incurables Hommes and the Incurables Femmes—are destined. The comfort of these retreats for the poor, aged, and infirm is naturally much coveted; and, as naturally, intrigues are set up to obtain admission. Infirm people will gain admission to an hospital, by a clandestine procedure, for the cure of some passing ailment. Once in the hospital it seems they will go the length of giving up their room and selling their furniture, even by the agency of their own children who are capable of supporting them, so that they may appear to be homeless as well as helpless; and so, on their recovery from their passing ailment, get admission to an asylum over the heads of more deserving applicants. The Assistance authorities have done their utmost to confound the authors of these little plots. A careful inquiry is made into the position of the relatives of the infirm patient who has been, or is about to be, discharged from the hospital. When the relatives are able to support their infirm member, they are requested to do so. Should they refuse, the poor creature is still dismissed from the hospital. The hospital administrator is ordered to have the discharged patient conveyed home, accompanied by an hospital servant or nurse chosen for the purpose on account of his or her conciliatory manners and tact. Should the relatives peremptorily refuse to receive the patient, and be deaf to the remonstrance of the hospital attendant, the outcast is carried back; for the new instructions include this sentence: "Under no circumstances whatever, the ingratitude of children, nor the indifference of kindred, may an infirm person be abandoned at his closed door, or even that of his own children, who owe him protection. Impress this fundamental rule on your agents." The police as well as the hospital authorities insist on the reception of the infirm patient at his home, and at the same time the Assistance authorities make the minutest inquiries into the circumstances of the family; and they hasten the infirm member's admission to an asylum, where the burden of his maintenance at home appears to be intolerable.

The hospital administrator is requested to pay special attention to consumptive patients. They are not to be got rid of hastily to make room for other patients, and when they are approaching their end, or their weakness is so great that it can be best assuaged at the hospital, they may on no account be moved. These general regulations are addressed by the director of the Assistance Publique to the heads of the Paris hospitals in a circular, which these heads are instructed to submit to the entire hospital *personnel*, so that the servants of all degrees may act harmoniously in the spirit of them; and the director adds that he will be always at hand and watchful to see that they are thoroughly carried out.

Reviews and Notices of Books.

The American Journal of Medical Sciences. Edited by Isaac Hays, M.D. Philadelphia: Henry C. Lea, Sansom-street. London: Trübner and Co., Paternoster-row.

The Richmond and Louisville Medical Journal. Edited by E. S. Gaillard, M.D., Professor of General Pathology and Pathological Anatomy in his Kentucky School of Medicine, &c. Louisville, Ky.

The New York Medical Journal. Edited by W. A. Hammond, M.D., and E. S. Dunster, M.D. New York: D. Appleton and Co., Grand-street. London: Trübner and Co.

The St. Louis Medical and Surgical Journal. Edited, in conjunction with M. L. Linton, M.D., Professor of the Principles and Practice of Medicine at St. Louis Medical College, by G. Baumgarten, M.D.

The Quarterly Journal of Psychological Medicine and Medical Jurisprudence. Edited by W. A. Hammond, M.D. New York. Trübner and Co., London. April, 1869.

It is with a feeling akin to depression rather than with exultation that we regard the way in which book succeeds book and periodical follows periodical in the medical world. We turn over the pages of some one or other of the various abstracts or retrospects of medical science, and we ask ourselves, How much of all this may be termed false work—imperfect observation, conjecture, or hasty generalisation? How few, comparatively, are the really good, the sterling products of an honest, able, and well-disciplined mind.

Among the large number of periodicals which appear from time to time on our table, we find those published by our Transatlantic friends not the least interesting. They usually manage to combine the practical and the novel. American physicians and surgeons, however much they may love theory and cultivate pathology, do not appear to forget that their main object is the cure of disease. They have directness of aim, and in their desire to hit the mark they are very willing to try the use of a new weapon or the employment of a new drug. We have before us a batch of periodicals of different sizes and varying interest. We trust we are not blinded by national vanity, or actuated by feelings of jealousy, when we say that the American periodicals, taken as a whole, are inferior to those of our own country. We give the Americans great credit for their keeping steadily in view the practical objects of our profession; but they are inferior to ourselves in the exercise of the critical faculty; and we are, it is to be feared, in this country, owing to the increase of literature of all kinds, fast losing it likewise, from lack of time to weigh a subject as patiently and thoroughly as a truthful and searching criticism requires.

Having spoken candidly of our neighbors' failings and confessed our own, let us turn to the periodicals before us. The first on our list is a well-known quarterly publication, containing a really good *précis* of the current medical literature, American, English, and foreign. It is cheap, well edited, and the criticisms are decidedly much above the average.

As specimens of the ***Richmond and Louisville Medical Journal***, we take two numbers—one for February of the present, and the other for September of last year. In the first we have, among other things, a well-written paper by Dr. Chaillé, Professor of Physiology in the University of Louisiana, on the "Physiology of the Cerebral Circulation; some good clinical records; abstracts of cases; and an interesting letter from Berlin, detailing the doings of Virchow, Traube, Cohnheim, and other Prussian medical celebrities. The other number of the *Journal*—that for September—opens with a good paper by Prof. Jones, of the University of Nashville, on the "Changes of the Blood in Hospital Gangrene;" with others on "Diphtheria," the "Presence of Trichinæ in the Domestic Fowl," a case of "Extra-Uterine Pregnancy," &c. Dr. Jones holds that hospital gangrene may, in its mode of origin, be of local or constitutional character. As regards the latter, he shows that in crowded wards the disease may be propagated within the system, and prove fatal before much local change has ensued. If we remember aright, Dr. Marston, of the Royal Artillery, advanced a similar view in some papers detailing his medical experience of the Crimean wounded soldiers.

The ***St. Louis Medical and Surgical Review*** is a bi-monthly publication. The numbers before us are pretty good; but scarcely equal in merit to some we have seen.

The current number of the ***Quarterly Journal of Psychological Medicine and Medical Jurisprudence*** is a remarkably good one. It contains a long article on the Physiology and Pathology of the Cerebellum, by the editor, to which we intend to revert; an essay, by Dr. Calkins, on Judicial Execution for Capital Crimes, in which the principal modes of punishment in all ages and countries are described in a very interesting manner; a paper on the Influence of Methomania upon Business and Criminal Responsibility, by Dr. Rogers; one on the Intermarriage of Relations, by Dr. Allen, who strongly opposes such intermarriages, on the ground that they have a deteriorating influence upon both the mental and physical attributes of the offspring; and, lastly, a capital article on Pascal, by Dr. Edwards Clark, in which he reviews the chief points of the recent Newton-Pascal controversy.

Foreign Gleanings.

THE LIMIT OF EXPERIMENTS ON THE LIVING.

The experiments to which we allude are related in the *Deutsche Arch. f. Klin. Med.*, vol. iv., parts 5 and 6, 1868, and quoted by the *Allg. Med. Central Zeit.*, Berlin, Feb. 10th, 1869. Dr. von Trautvetter was anxious to learn how high injections per anum could be forced up the intestinal canal, and he experimented upon the dead body animals, and living individuals. From trials on the dead subject, and by employing solutions of salts which, by coming in contact, give rise to vivid and well-known colors, he came to the conclusion that the fluid injected reaches to the junction of the colon with the small intestine, when the injection is forced up by means of the long tube. With the ordinary canula the fluid penetrated only to the lower part of the descending colon. All this is very instructive and very proper; but now comes an ugly feature. Anxious to ascertain how far the injection penetrated in a living individual, M. von Trautvetter selected a woman of twenty-eight, almost *in articulo mortis* from cavities in the lungs. Into the intestinal canal of this unfortunate woman the author injected about 150 cubic inches of a solution of ferrocyanide of potassium (the strength is not mentioned). As the patient had long suffered from diarrhœa, no fear was entertained as to any feculent masses arresting the injection. The patient died an hour afterwards whether from the progress of the disease, or the injection (which latter might have hastened the woman's end) is not clear. Twenty-four hours afterwards the autopsy took place; and by pouring a solution of sesquichloride of iron into the bowel, the whole of the large intestine (or at least, we suppose, the mucous membrane) presented an intensely blue color. Now, has M. von Trautvetter overstepped the limits of fair experimentation? This is a matter for grave discussion. Experiments on dogs had the same results. Would not these trials have been amply sufficient?

NASO-PHARYNGEAL POLYPUS; SUCCESSFUL REMOVAL.

M. L. Thomas, of Tours (France), submitted to the Surgical Society of Paris, a short time ago, the case of a boy of sixteen, who for the previous eighteen months had been affected with a fibroma, probably implanted in the basilar process, stretching down to the left cheek, and having invaded the sinus maxillaris. M. Thomas considered that the superior maxilla would have to be sacrificed before attempting to remove this large growth. This was done whilst the patient was under the influence of chloroform, anæsthesia being so cleverly kept up that the patient was unconscious to the end. The posterior naris was first plugged on the affected side, and all the parts were detached before the palate process was divided. The removal of the polypus offered no difficulty. The case turned out very favorably, and no relapse has taken place, though several months (a comparatively short time) have elapsed since the operation. It would appear that in England these large polypi are rare, as we seldom hear, amongst the many surgical operations performed in London or in the country, of removal of the superior maxilla for the extirpation of nasal polypi.

PERFORATING ULCER OF THE FOOT.

Mr. Hancock read a valuable paper, at a meeting of the Medical Society of London, a short time ago, on this peculiar ulcer. The author had collected a few cases from the practice of the French surgeons, and mentioned one of his own. As these cases are decidedly rare, we are therefore induced to extract the following from a late number of the *Gazette des Hôpitaux* (Jan. 9th, 1869):—M. Masbrenier had to treat a man, fifty years of age, who had performed on foot a journey of 500 miles. The patient perceived that a corn had formed on the plantar region. As it gave pain he pared it, and found, underneath, a small ulcerated cavity, of a red color, and containing serous fluid. On the patient's application to M. Masbrenier, the ulcer was as large as a three-penny-piece, surrounded by hard epidermis, very thick, and of a yellow color. It was situated over the metatarso-phalangeal articulation of the third metatarsal bone. Walking was very painful. Lunar Caustic was applied, and the indurated epidermis removed, a fair prospect of a cure being evident. The case is not complete in this shape; for, considering what has taken place in other cases of the kind, it is very likely that some caries of bone will ensue.

SPINA BIFIDA; INJECTION OF IODINE; RECOVERY.

The rule is that these cases die. M. Roux, of Meximieux (France) has recently published in the *Bulletin de Thérapeutique* the case of a girl, six weeks old, presenting this deformity. The tumor hung from the extremity of the sacrum to the lower third of both thighs. The author first made an exploratory puncture, and removed about an ounce of a limpid fluid. He tried then the following plan. An assistant was desired to hold the tumor in such a manner as to occlude the opening into the spinal canal; the operator then injected an ounce of the following solution: Distilled water, eleven drachms; tincture of iodine, three drachms; and iodide of potassium, 180 grains. The liquid was left five minutes in the sac, the latter being kneaded with the hand of the operator. The solution was then withdrawn to the last drop by the exhausting agency of the syringe. This proceeding succeeded so well that, in a fortnight, there was only a hard nucleus left no larger than a walnut. M. Roux attributes his success to the occlusion of the canal, and to the withdrawal of the very last drop of the injected fluid.

POPLITEAL ANEURISM IN A DIABETIC PATIENT.

Prof. Verneuil brought before the Academy of Medicine of Paris, recently, the case of a middle-aged man, upon whom he succeeded in solidifying a popliteal aneurism by means of partial compression of the vessel, and flexion of the limb. The case presented peculiar interest, as M. Verneuil was called in after mechanical, and also digital, pressure had not only failed, but had given rise to gangrene of the parts upon which the pressure had been applied. The author was struck with the idea that both the existence of the aneurism and the gangrene were connected with diabetes. The urine was examined, and found loaded with glycose. The ligature could, therefore, not be thought of, so M. Verneuil, in spite of its many difficulties, tried flexion of the limb. This was carried out with great caution, on account of the pain it occasioned; and as the progress was slow, the vessel a little above the popliteal space was intermittently compressed by a conical pad, the base of which rested on the bed, the limb lying on its apex by its own weight. A complete recovery took place, both from the diabetes and the aneurism, after a protracted period. Much credit is due to Prof. Verneuil for the sagacity with which he made out the real *origo mali*.

News Items, Medical Facts, &c.

Bromide of Potassium in Epilepsy — Fatal Effects of Tartar Emetic.—The last number of the Reports of the Medico-Chirurgical Society of Bordeaux states that an epileptic woman, who took for one year bromide of potassium, in doses varying from thirty grains to an ounce per diem, at last fell a victim to the debilitating effects of this salt, and died in a state of prostration. The same paper mentions a case in which three-fourths of a grain of tartarized antimony, given in three tumblers of water, produced severe sickness, weakness of pulse, hiccup, gradual sinking, and death in thirty-six hours. M. Chereau, who mentions the case in *L'Union Médicale* of Jan. 21st, gives neither the age nor the sex of the patient.

International Medicine. — The Spanish Government have just conceded to all Portuguese regular practitioners the right of settling and exercising their profession throughout Spain; and, it is added, certificates of studies, obtained in Portugal, will be received by the Spanish universities. By another decree, medical men *of all nations* may practise in Spain, by producing their diploma, and paying the entrance money of 200 crowns. On the frontiers between Belgium and Holland practitioners may attend patients in either country, by virtue of a new and very sensible arrangement.

A Lady Apothecary. — A young woman named Doumergue has just passed an examination before the Academy of Montpelier in the section of pharmacy, and been admitted, with one of the first numbers, to follow the lectures on botany, chemistry, toxicology, and elementary physics.

A Novelty in Hanging.—An American paper states that, "in the case of Carswell, recently executed in Oneida county, for murdering a girl, the hangman put his victim under the influence of anæsthesia, and so projected him into eternity."

A **Telegram** from Hong-Kong reports that the cultivation of the poppy has been prohibited in China by an Imperial edict.

PUBLISHED BY
Wm. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 8. NEW YORK, AUGUST, 1869.

Lectures
ON THE
PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM;
AND ON THE
TREATMENT OF ORGANIC NERVOUS AFFECTIONS.

By C. E. Brown-Sequard, M.D., F.R.S.,

Fellow of the Royal College of Physicians of London, Member of the National Academy of Sciences (U. S.). Etc.

LECTURE II.—Part III.

ON ORGANIC AFFECTIONS AND INJURIES OF THE SPINAL CORD, PRODUCING SOME OF THE SYMPTOMS OF SPINAL HEMIPLEGIA.

Symptoms which can show in what lateral half of the spinal cord, in the cervical region, is located a disease or an injury—Two principal symptoms in cases of a lesion in both sides of the spinal cord, but more extensive in one than in the other—Distinction between the places of passage of nerves of the upper and those of the lower limbs, in the upper part of the spinal cord—Two cases of incised wound of the upper part of the cervical region of the spinal cord—Remarks on the causes of death in one of these cases—Case of rheumatic affection of the spine producing paralysis of motion in one arm and anæsthesia in the other.

The facts and the deductions arrived at in the beginning of this lecture render it perfectly certain that, in a case of evident disease of, or injury to, the spinal cord, if we find several, or even only one, of the following symptoms, we can positively conclude that the lesion is located in one of the lateral halves of the spinal cord, and, still more, we can surely know in which of these halves it exists.

1st. A paralysis of voluntary movements limited to one of the lateral halves of the body shows that the lesion is in the corresponding half of the spinal cord.

2nd. A paralysis of the muscular sense in one only of the lateral halves of the body shows also that the lesion is in the corresponding half of the spinal cord.

3rd. A paralysis of the vaso-motor nerves, chiefly evidenced by an elevation of temperature in one of the lateral halves of the body, equally shows that the lesion is in the corresponding half of the spinal cord.

4th. Hyperæsthesia — i. e., an increased power of feeling and not pain — in one of the lateral halves of the body, clearly indicates also that the lesion is in the corresponding half of the spinal cord.

5th. The various ocular and facial symptoms, which we know as effects of the paralysis of the cervical sympathetic nerve — i. e., vascular dilatation, elevation of temperature, hyperæsthesia, partial closure of the eyelids, constriction of the pupil, etc., — in one of the lateral halves of the head and face, positively show also that the lesion is in the corresponding half of the spinal cord.

6th. Anæsthesia in one of the lateral halves of the body leaves no doubt that the lesion is in the opposite half of the spinal cord.

One of these symptoms alone (if it were possible that a lesion in a lateral half of the spinal cord should produce only one of them) would be quite sufficient, in a case such as I have supposed, to show in which lateral half of that organ exists a lesion. *A fortiori*, then, in those cases in which we know toat a disease or a lesion is in the spinal nervous centre, when several of these symptoms, or, of course, all of them, coexist, no doubt whatever can remain as regards the lateral half which is the seat of the lesion.[*]

The facts I have brought forward in this lecture, and the deductions I have drawn from them, give also a strong foundation to the two following propositions, relating also to cases in which it is known that an injury or a disease exists in the spinal cord:

1st. When a paralysis exists on both sides of the body, in a greater degree, however, in one than in the other, the lesion is in both sides of the spinal cord, but chiefly in the side corresponding to that of the greater degree of paralysis.

---

[*] In another part of this lecture, when discussing the question of the value of these symptoms in the comparative diagnosis of cerebral and spinal hemiplegia, I will show the importance of the coexistence of all, or at least of several, of them, to establish that the spinal cord, and not the brain, is, then, the seat of the lesion.

2nd. When a complete or very marked anæsthesia exists in one of the lateral halves of the body, with some diminution of sensibility, instead of hyperæsthesia, in the other half, the lesion exists chiefly in the lateral half of the spinal cord corresponding to the side of least anæthesia, but it extends slightly to the other half of the spinal nervous centre.

With the help of these last two propositions and of the six others previously given, it will become evident to any one studying the cases I have related in my first lecture, that they really were, as I have asserted, cases in which the lesion existed either only or chiefly in one of the lateral halves of the cervical region. It being positively proved that such was the seat of lesion in these cases, they become as valuable as if an autopsy had confirmed the diagnosis, and they may serve as types of the kind of paralysis I intended to illustrate in the preceding lecture.

This demonstration will also serve the purpose I have in view in the present lecture — namely, to show how certain lesions of the spinal cord will produce some of the symptoms of spinal hemiplegia, and not the others. If, for instance, an organic affection or an injury is limited to a part only of the transverse extent of a lateral half of the spinal marrow, in the cervical region, the symptoms will be slighter in intensity and less numerous than in cases where the whole transverse extent of the spinal nervous centre is injured or diseased. On the other hand, if a lesion (from disease or injury) occupies the whole, or nearly the whole, of the transverse extent of a lateral half of the spinal cord, and also a part of the other half, in the cervical region, symptoms will exist in both sides of the body.

Before relating the cases I intend to report in this lecture, I must say, that although some important symptoms are not mentioned in the history of a case, they may have existed, and either been unknown to, or neglected by, the reporter of the case. The fact that medical men will sometimes overlook even a most important symptom is well shown by a case published by the eminent French surgeon, Boyer, which I will presently relate, and in which the existence of anæthesia in the side of the body opposite to that of an injury to the spinal cord was discovered only by a mere accident.

Other features of organic affections or injuries in the cervical region of the spinal cord deserve notice before I come to the history of the cases I intend to relate in this lecture: I mean some peculiarities, on which I will insist hereafter, as no attention has been paid to them either by physiologists or medical men, notwithstanding the important physiological and pathological conclusions they lead to. I will only say now, that these peculiarities are — 1st, that a lesion in the upper part of the cervical region of the spinal cord can produce anæthesia in the lower, or in the upper limbs, according to its location, and that, consequently, the conductors of sensitive impressions for the lower extremities do not pass through the same part of the spinal nervous centre as those of the upper extremities; 2ndly, that a lesion, in the upper part of the cervical region of the spinal marrow, can produce paralysis of voluntary movement in the lower limbs alone, or in the upper limbs alone; and that consequently the conductors serving to that kind of movement for the upper extremities do not pass through the same part of that nervous centre as those going to the lower extremities.

After this rather long preamble I come to the history and discussion of some cases of organic affections of, or injury to, the spinal marrow, presenting several of the symptoms of the complete and genuine spinal hemiplegia described in the previous lecture.

I will first relate the case of Boyer, already alluded to, giving it almost entire, on account of its importance.

CASE 17. *Wound of the upper part of the cervical region of the spinal cord, on the right side; paralysis of voluntary movement on the same side; anæsthesia on the left side.*—A drummer of the Paris National Guard was wounded by a sabre, thrown at him from behind. The point entered the neck in its superior and posterior part. The wounded man at once felt his legs giving way, and fell. The next day he was brought to the Charité hospital. The wound, two inches long, was situated at the posterior and lateral part of the right side of the neck, immediately below the occipital bone. *The right upper limb had completely lost the power of motion; but it had retained all its sensibility.* The right inferior limb seemed to be a little weakened; but its sensibility was quite normal. Respiration was somewhat uneasy; the pulse was frequent, strong, and full.

On the fourth day the weakness of the lower limb had completely disappeared; the patient could slightly extend the forearm, but was unable to flex it.

On the thirteenth day the patient had recovered his general strength, and walked about; but the paralysis of the right upper extremity remained unchanged. *Playing with a nurse, who pinched him, he found that the left side of his body was anæsthetic.* He told me so the next day, and I observed the following facts: — *The left inferior limb and the left side of the trunk had their natural size, movements, and nimbleness; but the patient had no feeling whatever when the skin of those parts was pinched, pricked, and even cut.* Pins were pushed to the depth of three or four lines, and the man whose face was turned away, had no notion that anything was done to him. He, however, had some kind of feeling, but only extremely obscure and faint, when a large surface of skin was touched, as was the case when a whole hand was placed upon the skin and moved to and fro. This anæsthesia existed every where in the foot, the leg, and the thigh, on the left side; it was complete also on the left side of the abdomen; but it ceased abruptly at the median line both in the front and the back of the body, with this remarkable peculiarity, that near that line, when the patient was pinched on the left side, he affirmed that he felt a slight sensation in the corresponding point on the right side.

There was an equally complete lack of sensibility at the base of the chest; but a little higher an obtuse sensation began to be perceived, and became more and more powerful when the exploration was carried upwards, so that, at the level of the fourth rib, the skin had a degree of sensibility equal to that of the rest of the body. The upper left limb was in a perfectly normal state. Twenty days after the accident the patient left the hospital, cured of the wound in the neck, and having no pain or stiffness in that part; but the arm, forearm, and hand, on the right side, were almost completely paralysed, and the left side (trunk and lower limb) was in the same state of anæsthesia which has been described. A few months later he came to see me; his condition had hardly changed.

This case, like several others I have related, shows that a division of a part of the spinal cord, even high up, not far from the madulla oblongata, can be borne without any bad influence on the great organic functions. It presents these two most essential symptoms of spinal hemiplegia—1st. Paralysis of voluntary movement on the side injured. 2nd. Anæsthesia on the opposite side. The fact that the paralysis was almost entirely located in one of the limbs (the right arm), and that the anæsthesia was confined to the left side of the trunk and the left lower limb, shows that the lesion occupied only a part of the right side of the spinal marrow, above the origin of the nerves of the upper limbs.

It is a feature of importance in this case that respiration was so little disturbed. Evidently the cord was injured above the origin of the phrenic nerve, and (as I will show in another lecture) a great part of its lateral column was divided. Had Schiff's theory been true, respiration should have been notably impaired in the right side of the chest.[*]

In the following case, one of the most prominent features of spinal hemiplegia was not noted, although it must have existed, at least in some degree: I mean anæsthesia on the opposite side to that the of injury. It is not stated that it existed, but there is no statement also that sensibility persisted, and most likely, as in the above case, no search was made to ascertain whether sensibility had been at all disturbed in that side of the body. The case, however, is a most interesting one, and excited a good deal of attention at the time of its first publication by Bégin. I only give a summary of the case.

CASE 18. *Transverse division of the right antero-lateral column of the spinal cord at the level of the sixth pair of nerves; paralysis of motion in the corresponding side, with conservation of sensibility.* — L—— was wounded on the 21st October, 1840, at the posterior part of the neck. He fell at once on the right side, and tried vainly to get up. The next day he was brought to the Val de Grâce Hospital, where Dr. Bégin saw him. He had no pain, and complained only of some feeling of numbness in the right side. The succeeding day it was ascertained that the wound, which had healed, was transverse, 13 millimetres long, on the right side. at the level of the fifth cervical vertebra, 24 millimetres from the spinous process of that side.

There was a feeling of heaviness in the right thoracic limb, with formication in the hand. He could with difficulty move the arm and forearm; but the fingers were half flexed, could not be extended, and he could only imperfectly close them on anything. *The right abdominal limb was completely deprived of movement. Sensibility was quite normal in the limbs and trunk on that side.* Visceral functions were in a perfect condition. Respiration, however, after having been normal for three or four days, became quick and difficult, and death occurred from apnœa.

Autopsy.— A fragment of a knife was found lodged in the spine, the point entering the posterior part of the pharynx between the sixth and seventh cervical vertebræ, and the base firmly fixed in the right lamina of the sixth vertebra. The right side of the spinal cord had been divided obliquely from the line of origin of the posterior roots to the anterior median sulcus.

In this case the instrument had injured the spinal cord obliquely from behind forward, dividing the lateral and the anterior white columns and the anterior grey cornua on the right side, but had left uninjured the whole white posterior column and a good part of the central grey matter and of the posterior cornua on the same side. The fact that the posterior column was not injured explains why there was no increase in the sensibility on the side of the wound. It is much to be regretted that the state of sensibility in the opposite side was not recorded, as the autopsy showed so well-defined a lesion that it would have been most interesting to know exactly the effect on sensibility in that side. There must have been, at least, some anæsthesia, although some part of the grey matter remained undivided. Had a thorough examination been made, some anæsthesia would also have been found in the right arm, owing to the injury that some roots of the sixth or seventh pair of nerves must have suffered both outside and inside of the right half of the spinal cord. If we compare the case with the other cases of incised wound of that organ which I have related, we find that death occurred quickly in this case and not in the others — a difference the cause of which is chiefly, if not entirely, in the fact that there was a foreign body irritating the spinal marrow in this case, while there was no such thing in the other cases.[*]

The following case differs from the two preceding in this respect: that the cause of the symptoms was an organic affection, and not a wound. It differs, also, from them in this other important feature: that Dr. Charles B. Radcliffe, who observed it, knew my views pretty well when he saw the patient, and therefore paid attention to some symptoms which otherwise might not have been noticed. I will only give here a summary of the case.

CASE 19. *Paralysis of the right arm, with hyperæsthesia, and a slight elevation of temperature; considerable anecæsthesia of the left arm.* — Short and thin man; head twisted to the right shoulder, and jaws clinched by muscular spasm. He can, by strong effort, separate his teeth and turn his head round a little. Mastication impossible, and swallowing difficult from spasm in the throat. From the occiput to the fourth or fifth cervical vertebra there is a hard swelling, not tender on pressure, but painful when the neck is turned.

---

[*] I found, long ago, that the lateral columns of the spinal marrow, which Schiff supposes to be the only channels between the encephalon and the respiratory muscles, can be divided transversely without any impairment of respiration, and that, in most instances, there is, on the contrary, an increased power in the diaphragm and other inspiratory muscles after such a lesion above the origin of the phrenic nerve. (See "Archives de Physiologie Normale et Pathol.," 1869, p. 299.)

[*] This cause of difference, as I will show elsewhere, is extremely important as regards the treatment of fracture of the spine by removal of the broken pieces of bone, which may act like the foreign body in the above case, and cause death by irritating the spinal cord.

The right arm is almost entirely paralysed, and its cutaneous sensibility appears to be decidedly exaggerated; the left arm, on the contrary, preserves its power of voluntary movement, and its cutaneous sensibility is in a great measure abolished. Reflex movements can be excited in both arms, especially in the left. The right hand and arm are a trifle warmer than the left. No difference between the two sides of the face as regards warmth and vascularity; pupils equal. No head symptoms; no weakness or numbness in the legs; bladder and rectum normal.

After a few months the head was still a good deal turned; but mastication and deglutition were unattended with difficulty, and the *right* arm was still somewhat weak and the left numb.

In this case a pressure from outside upon the right side of the cord produced the symptoms. I will not now speak of the peculiar feature that the upper limbs alone were affected, as I shall soon have to revert to that point, and will then speak again of this case.

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.,

Lecturer on Orthopædic Surgery at the Hospital.

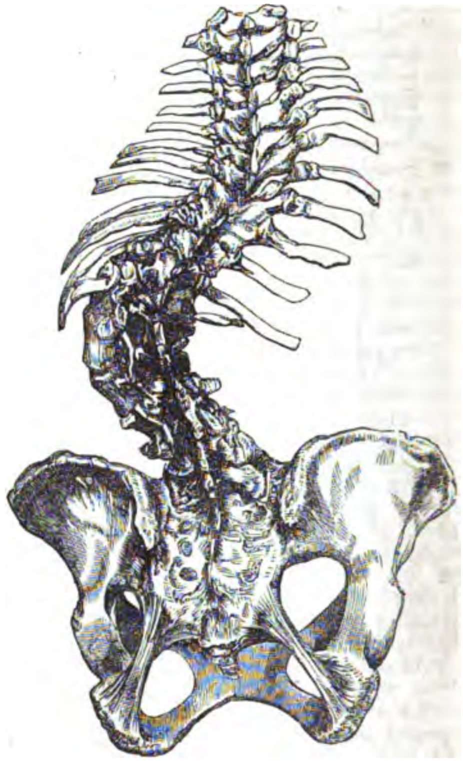
LECTURE VIII.—(*Concluded.*)

ON DISTORTIONS OF THE TRUNK AND NECK.

Lateral curvature of the spine (*continued*).—The pathological conditions which result from lateral curvature of the spine may be divided into those effects which are produced immediately upon the spine and trunk, and those which are consequent upon these changes.

Confirmed lateral curvature is not purely a lateral deviation; for so soon as the curves become more or less permanent, the vetebræ which are involved in them become rotated on their axes in such a manner that the anterior surfaces of the bodies of the vertebræ occupy the convexities of the curves, and consequently present more or less laterally. In a severe case, such as that from which Fig. 24 was taken, the anterior surfaces of the bodies of the vertebræ have undergone such an amount of rotation that they have acquired a lateral instead of their normal direction, and occupy the greatest convexities of the curves. But although the bodies of the vertebræ may have become thus rotated, the spinous processes may perhaps undergo only slight change, so as scarcely to indicate a lateral curve. These points are well shown in Figs. 25 and 26, especially in the dorsal curve, which, if traced by a novice, would scarcely be recognised as a spinal curve, although the bodies of the vertebræ are rotated to the extent of nearly a quarter of a circle. Perhaps, however, the course of the spinous processes in the lumbar portion of the spine is even more remarkable, considering the greater rotation which has taken place in this portion of the spine—rotation equal to one-fourth of a circle. Thus it is that a spiral twist of the spinal column may exist to a very great extent through rotation of the bodies of the vertebræ, without the apices of the spinous processes describing a corresponding curve. It is important to remember this circumstance; for many become hopelessly deformed, because the mode in which spinal curves are formed is not rightly understood.

Fig 24.



While a lateral deviation of the spine is incipient only, the intervertebral cartilages become compressed laterally, and they recover their form when the superincumbent pressure is removed; just as is well known to occur in health, when a man of ordinary stature, who has been in an upright position during the whole day, loses from half an inch to three-fourths of an inch, through the compression which takes place of the intervertebral substances, and which he regains only after some hours spent in a recumbent posture.

When, however, these intervertebral substances, become unequally compressed, and this effect is continued from day to day, they lose in a measure their elasticity, and do not recover their full form during the period of repose, but remain somewhat compressed and wedge-shaped. Curvature is then permanent, and rotation of the bodies of the vertebræ commences. The bodies of the vertebræ are not all in the same measure rotated; but those are most rotated which are nearest to the centre of the curve, and that vertebra which is central is rotated and most wedge-shaped. This is shown in Fig. 27, where the vertebra in the centre of the lumbar curve is represented as rotated to the extent of one-fourth of a circle and wedge-shaped, while those above and below are both less rotated and less wedged-shaped. And in the same manner the intervertebral substances which enter into the curve are reduced in thickness.

Fig 25.

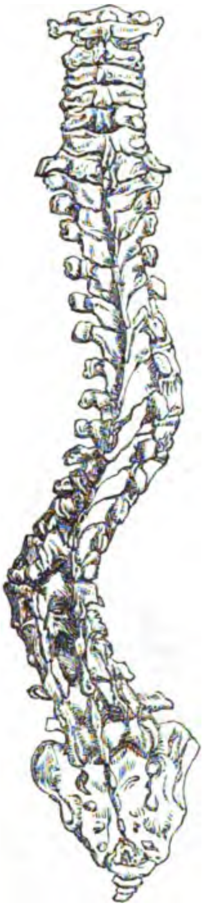
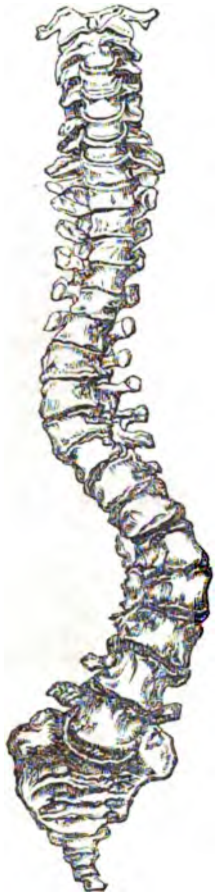


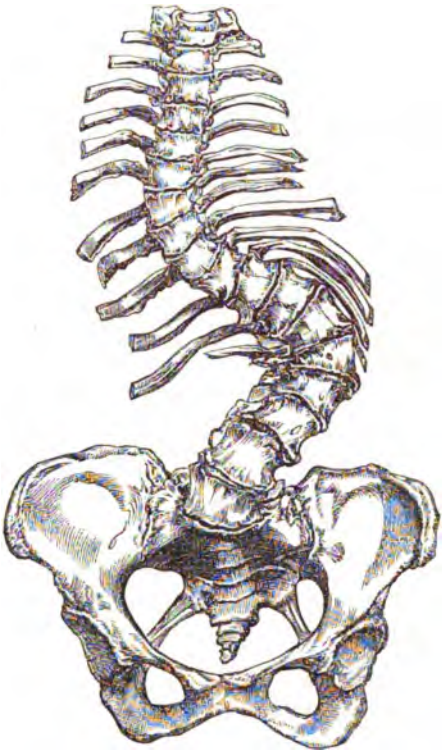
Fig 26.



These changes in form of the vertebræ during the development of a lateral spinal curve are very remarkable; but the most striking change which takes place in relation to spinal curvature is that which is effected in the shape of the thorax. The ribs necessarily follow the altered positions of the vertebræ to which they are attached, and undergo a movement of rotation backwards on the convex side of the curve, so that their angles are rendered more prominent, and they become more horizontal in their direction, while the intercostal spaces become wider than in their normal state; but on the concave side of the curve the ribs sink and become flattened, the intercostal spaces also become more or less effaced through overlapping of the ribs, and the ribs are carried foward, and become prominent on the anterior and lower part of the chest. On both sides of the chest the ribs are flattened; but on the convex side of the curve, in consequence of the rotation of the vertebræ into the convexity and of the flattening of the ribs, the lung is much compressed. Through these changes in the form of the thorax, and others which are coincident with them, the capacity of the chest is diminished. Also, the appearance of distortion is much increased by the prominence of the scapula.

On the convex side of the curve this bone is thrust up, and is placed obliquely, through the increased angularity of the ribs, and it is stil futher raised by muscular action.

Fig 27.



The pelvis is not materially affected in an ordinary instance of lateral curvature of the spine. It becomes oblique, as has been already observed; and when the superincumbent weight is unequally transmitted to the ground, it becomes slightly flattened. When, however, the pelvis is effected with rickets, it becomes flattened from above downwards, both by the superincumbent weight and by the resistance of the lower limbs; so that the space between the promontory of the sacrum and the symphysis of the pubes is diminished.

A case of this description is on record, where it was necessary to perform the cæsarean section, in which the pelvis was so much deformed that a ball of one inch in diameter would not pass through the brim.

I will, in the second place, proceed to consider, cursorily, the changes which result to the parts contained within the compressed thorax, and to those which are attached to the trunk itself.

The thoracic space, on the convex side of the curve, is diminished by the flattening of the ribs, and by the rotation of the bodies of the vertebræ; and the heart is in consequence somewhat displaced towards the concave side of the curve.

Respiration is considerably affected; and in consequence of the imperfect expansion of the chest and lungs, the right side of the heart becomes dilated, and the blood is insufficiently aërated.

The aorta follows the inflections of the vertebræ in spinal curvature. It is bound down to the spine by its branches, and, therefore, always follows the curves of the spine. Its course, under these circumstances, is well shown in a preparation numbered 3416 in the museum of the Royal College of Surgeons. In a practical point of view, this course of the aorta may appear to be a matter of only small importance. It deserves to be remembered, however; for in a thin person, with the convexity of the lumbar curve towards the right side, the aorta may be felt immediately under the finger, lying out of its normal course, and to the right of the umbilicus. I have known the pulsation of the artery to suggest ideas of aneurism.

Together with severe lumbar curvature, there is always found obliquity of the pelvis. This obliquity of the pelvis is not a simple tilting to one side (one side being raised while the other is depressed), but there is at the same time a slight movement of rotation of the pelvis itself,—which, indeed, is necessitated by the circumstance of the lumbar curve and the rotation of the lumbar vertebræ; so that the anterior superior spinous process of the ilium is not only raised above that of the opposite side, but it is also in advance of it.

In the female, this obliquity is of less importance than in the male; but in the male the triangular ligament of the urethra together with the rest of the pelvis, being twisted, the direct course of the urethra, behind the ligament no longer corresponds with that in front of it. This twisted condition of the urethra may cause an impediment to the introduction of a catheter into the bladder; and it should always be borne in mind when stricture of the urethra exists in such a case. Whenever in cases of severe lumbar curvature it is required that an elastic catheter shall be used, this is always withdrawn, moulded into a double curve, similar to the urethral curve.

The treatment of lateral curvature can only be undertaken with advantage when the cause of the curvature is understood, and, further, when the order in which the various curves have been formed is understood.

It must be obvious to all who reflect on the subject that it is useless to endeavor to remove a spinal curve whilst the cause of curvature yet remains; for, even should the curve be removed, it will recur so soon as the means which were adopted to remove it are discontinued, and the same cause will immediately again distort the spinal column in the same manner as before. Thus, let us, for instance, suppose that some affection of the lower limbs has occasioned obliquity of the pelvis, a primary lumbar curve and a compensating dorsal curve. The treatment which was formerly adopted was, without reference to the cause of curvature, to make pressure on the convexity of the dorsal curve. This mode of treatment was not only useless, but positively injurious: it increased the lumbar curve, and flattened still more the flattened ribs.

The course of treatment which should be adopted is, in the first instance, to remove the cause of the obliquity of the pelvis. Whatever this may be—whether it be some affection of the foot, knee, or hip,—it should be treated and removed, if not before, at least at the same time as the lumbar curve is being treated. Again, when the dorsal is the primary curve, it may be treated by means of a portable instrument, while the lumbar curve is supported by another portion of the same instrument. In this form of curvature, muscular exercises are useful to develop the muscles on the concave side of the curve.

The treatment of spinal curvature should be undertaken so soon as the slightest distortion is perceived. It is difficult to remove a spinal curve at any time; especially it becomes difficult when the disposition to curvature is inherited, and it can only be removed when mechanical means are rightly directed to this end. It was with good reason that Sir Benjamin Brodie said: "The treatment of the disease cannot be begun too soon after the first signs of spinal curvature are perceptible." *

A slight curvature of the spine is by some considered to be a matter of such trivial importance as to be unworthy of attention. It is a very serious error to offer such advice, however, and in later years it must occasion great distress. However trivial spinal curvature may appear in the commencement, its course is necessarily to produce increasing deformity, with more or less pain, and impairment of the general health. So little are the laws of equilibrium understood, that it is imagined by some that a wry-neck, or a "growing out" shoulder, or an oblique pelvis is an affair of small importance, and that distortion will probably not increase beyond that which is at the time observed. Some even are bold enough to imagine that a child will "grow out" of these distortions. These are delusions which observation quickly dispels. When curvature of the spine, from whatever cause, has commenced, it must go on increasing until, by the formation of compensating curves, the equilibrium of the body is restored.

Having explained how pathological spinal curves are formed, and how they are compensated, so that the equilibrium of the body may be restored, I will proceed to consider the application of mechanical means to the removal of spinal curves.

So long as a spinal curve is incipient, it may not be necessary to have recourse to mechanical support to the spine itself; but it may be sufficient to remove the exciting cause of distortion, and to develop the muscular system by means of well-directed exercises. When, however, these measures are found insufficient, support should be given to the spine itself without more delay.

If it be a fact that one curve is first formed, and that others are formed as compensatory of this primary curve—and no one can doubt it who has watched these cases attentively,—then it should follow that treatment must in the first instance be directed especially to the removal of this primary curve; for to remove a secondary curve without giving efficient support to the primary curve is the most certain mode that could be devised of increasing the original curve. Having determined, then, which is the primary curve, force should be applied(not on the greatest convexity of the dorsal curve, to flatten still more the ribs and render the sternum prominent) in that direction which shall tend to restore the positions of the ribs, and also to restore the vertebræ, which have undergone some rotation. This is most effectively done by applying the force to be used to the lower arc of the curve, both of the primary and of the secondary curve, when the curves are formed from below upwards; and when they are formed from above downwards the lower arc of the dorsal curve should be supported, and the upper arc of the lumbar curve. When the combined forces of a well adapted instrument are made to act in the directions now indicated—namely, obliquely towards the centre, they tend to unbend the primary curve. The movement which is thus commenced in the primary curve is often greatly assisted by muscular action on the compensating curve. In this manner the several curves are at the same time acted on and unfolded.

---

* Lectures on Distortion of the Spine not connected with Caries.

The time which is necessary for the completion of this unfolding process depends on the degree of fixity of the curve, and on the ability to bear the treatment. Some never shrink from a well-fitting instrument, while others cannot bear effective pressure. Among the later are those who suffer from rickets. Again some cases are necessarily incurable, and they must be recognised from the beginning; such as those which are produced by inflammation and its results within the thorax, from congenital malformation, and also where anchylosis has taken place, whether in angular or in lateral curvature; for in the former a slight lateral curve not unfrequently forms above and below an irregular union, and in the later, bands or bosses of bony matter are thrown out, uniting two or more vertebræ.

It is not necessary in this place to say that it is of the utmost importance to attend to the general health in the class of cases now under consideration, for constitutional treatment is especially needed where there is debility, and debility and rickets are the principle predisposing causes of spinal curvature. At the same time, therefore, that mechanical treatment is undertaken in order to remove deformity, constitutional treatment should, so far as is possible, be made conducive to the restoration of health.

Lecture

ON

THE DISEASES OF CHILDREN AS A SUBJECT OF SPECIAL STUDY.

Being the Introductory to a Course on the Subject in Edinburgh.

BY WM. STEPHENSON, M.D.,

Fellow of the Royal College of Surgeons of Edinburgh, Physician to the Royal Hospital for Sick Children, Edinburgh.

The importance to medical men of a knowledge of the diseases of children is so self-evident and universally admitted, that it is quite unnecessary for me to say one word on the subject The *necessity*, however, of the diseases of children being made the subject of special study on the part of students, whatever may be the opinions held thereon, is practically disavowed by all our licensing boards. Whilst an intimate knowledge of the origin and distribution of all the nerves of the body is demanded of you in your examinations, you may, if you choose, be perfectly ignorant of the physiological peculiarities of the nervous system in a child. Whilst it is required of you to know how and when to put forth your hand, if possible, to save the life of the child before it is born, it is quite unnecessary that you should have been told how to sustain and foster that life amid the far more numerous dangers that surround it in the early period of its self existence. Before you obtain your diploma, you must now give proof at the bedside of your familiarity with the sounds of health and disease in the adult chest, and your power of eliciting by interrogation the ailments of your patient; but it is unnecessary that you should have acquired the like power over the very different means to be employed in obtaining the same information regarding the child. The consequence is, that medical men pass from our colleges into the practice of their profession, to find themselves, in the majority of instances, specially deficient in that very branch which not only forms the larger proportion of their practice, but in which also the greatest mortality exists.

Anomalous as is this state of affairs, this is not the occasion upon which I would enlarge on the topic in a legislative point of view. We have here an important blank in your curriculum of study,[*] which is left for you to fill up how and when you can; and I cannot better preface this course of lectures than by showing wherein lie the necessity and advantage of making the Diseases of Children a subject of special study, and that, too, while yet you are students, before your leisure is curtailed by the unremitting calls of your profession.

The experience of those who have not so prepared themselves may be thus briefly stated. The system of interrogation which they have hitherto employed proves quite insufficient for the end in view. Physical signs are found to vary both as to actual presence and diagnostic value. Prognostic indications are equally at fault. In fine, the whole language of disease in early life is found to be a dialect, with many idiomatic expressions, with which they are unfamiliar.

The study of medicine may be compared to that of a language. Your knowledge of the latter may extend no further than to make your wants known, and enable you to make your way through the country where it is spoken; or you may have advanced a little further, and be able to read without difficulty any of its ordinary literature; or, still further, your acquaintance may have become so intimate that you are familiar with all its idiomatic expressions, and can analyse the writings, and enter into the true spirit of the best authors. So in medicine: your knowledge may be but sufficient to pass muster, and enable you to get along in the world; or, by dint of experience, you may acquire a readiness and tact, but be ignorant of the laws upon which it is based. But, better still, by making your own every new ray of light which the advancement of our science is throwing around, you may daily lessen the groping in the dark and routine in practice of which we still have so much to mourn.

---

[*] Although attendance is required on a course of lectures on "Midwifery and the Diseases of Women and *Children*," the last part of the subject never, in Edinburgh at all events, embraces such a review of the subject as is contemplated in the lecture. Sometimes it is never touched upon, and rarely extends further than the management of the child during the first week of life.

Now the differences between the diseases of children and those of adults are pretty much those which lie between two dialects of the same language; and a practitioner trying to treat children, without some previous study, is like an Englishman attempting to read the works of Burns without a knowledge of Scotch. With the aid of a glossary the one may make out the sense, but he cannot fully enter into the feeling, and must miss much of the beauties; so the other, by means of a handbook, may treat the disease, but there is much which he, too, misses and cannot see. What, moreover, he is most likely to miss is that which affects, not only the present, but the future of his patient, and what in one member of a family may throw light on the affections of the others.

The great advance which the science of Medicine has made does not merely lie in the discrimination and accurate description of the various affections which are met with; although in this much has been done. It has been much in fashion of late to exhume from ancient writings the description of diseases, for the purpose of showing the acuteness of observation and intimate knowledge of the fathers of our art. But to me these descriptions are but as dry bones when compared with the science of the day which has brought them together, bone to its bone, and not only clothed them with flesh, but imparted to them a living principle,—which has recognized among the disassociated diseases of our nosological classification the actions of one and the same morbid agency; or, regarding it from another point of view, which has enabled us to discriminate in local manifestations of the same character the effects of very different causes.

It is a matter for just pride to be able to say, with regard to the progress of medicine, that we have consigned to the grave the "entity of disease," and that the occurrence of so-called "idiopathic" affections is every day becoming more and more rare. But while I would thus express the advance of medicine, there is much in our teaching and in our text-books that tends to foster in our minds the idea of "entity," and, from lack of knowledge, to increase the supposed idiopathic nature of local affections. Now, judging from my own experience, there is no field of medicine better adapted for studying disease in the light of which I now speak than the diseases of children. The frequency of the diathetic states, and the readiness with which they can be detected, from their well-marked characters in childhood, render the study of our subject one of the best means of extending our views as to disease, and of throwing much light upon the pathological phenomena which are met with in after-life.

An appreciation of the part which the constitutional state plays in disease is daily gaining ground in reference to children, and marks the most important advance made regarding their diseases. This is in a great measure due to the stimulus given to their study, and opportunity for observation afforded by the establishment of special hospitals for their treatment. As the time at our disposal is so limited, it will be impossible for me to enter into minute detail regarding all the affections incident to childhood. But I believe it will be more to your benefit if I endeavor to review them in the light of that advancement of which I have spoken, and put you in possession of the means whereby you can look beyond the mere local affection, and detect the character of that constitutional state which is the primary source of the disease and through which alone you can expect successfully to treat it. This, together with an acquaintance with the special physiological and pathological peculiarities, make up an amount of foreknowledge which every one should possess before entering on practice, and which only can be attained by making a special study of the subject.

Before entering upon our course I would have you clearly to understand what it is we are about to study. I once heard the remark made that "there is not much to be learned about children: there are a few diseases not met with in the adult; and there is the modification of doses according to age." I trust such narrow ideas are not common. Some of the diseases which occur in childhood are peculiar to that period of life, but by far the larger number are common to all ages. The term "diseases of children" does not define our study: it is, *disease as it is in children*, whatever its nature may be, the modifications derived from peculiarities in the physiological state, the difference in the symptoms, and the significance of the physical signs.

No better illustration of the necessity for a special study of our subject can I give than that of phthisis—a disease common to all periods of life, yet which may exist to the most advanced stage in the child without one of the pathognomonic signs which are found in the adult, and on which so much importance is laid. No question is in reality more difficult to give a positive answer to, none where a nicer appreciation of all the manifold elements is required, than to say whether tubercle does or does not exist in children. All the general indications, even to extreme emaciation, may occur from other causes; while the results of the physical examinations are often uncertain or *nil*.

Again, what more common at all periods of life than pneumonia? yet the physiological peculiarities of childhood are at every step stamped upon the affection at that age. From the rapid diffusion of morbid acts in infancy, what to-day seems a trifling catarrh may to-morrow be pneumonia. The reaction in the system takes place rapidly, and is out of all proportion to the material lesion. Symptoms which in the adult would indicate a lesion of serious character may be induced from a trifling cause, such as the presence of worms in the bowel. From the intimate sympathetic relations of all the parts, symptoms of serious derangement of other organs may draw the attention entirely away from the chest, and you may thus be at a loss to say what is the nature of the disease. Again, the progress of symptoms is rapid, the physical signs are evanescent; and soon you may be gratified to find remission of the symptoms. The rapidity of breathing has gone, the fever is less, and you may be induced to give a favorable prognosis. Next day the child is dead, and by sad experience you learn the fact that in children reaction may suddenly become lowered without a favorable c h nge having taken place in the disease.

These two illustrations I have given will suffice to show that a knowledge of disease, as it is in adults, will in no way prepare you to combat affections in childhood, although designated by the same name. Also, that a mere knowledge of symptoms, as detailed in systematic works, is insufficient when brought face to face with the disease under varying physiological and pathological states of the constitution.

Let us briefly glance at the principal peculiarities which mark the period of childhood.

The first and chief—from which, in fact, all the others spring—is, that childhood is the *period of rapid growth and development.* This growth and development takes place in a constant and regular manner; and there is a normal standard whereby we judge of a child's constitutional state. There are certain deviations from this standard, quite consistent with health, but of great importance as indications of the constitutional type and diathetic state which the child has inherited; while there are others which at once manifest a morbid action already present. Here, then, at the first step, we have a point of great practical importance—one which you will have almost daily to bring into practice, and which supplies one of the most important keys to the elucidation of many affections in the early years of life.

As the various parts of the body are undergoing development and growth they are structurally incomplete, and therefore functionally imperfect. Each system, then, demands special study as to its relative condition.

In the process of digestion, what more important than the knowledge of the proper diet as suited to the age? Yet nowhere is the student instructed in this most essential point, while he is soon to become the authority to whom many an anxious mother is to look for guidance. Many are the little details relating to food which medical men are left to acquire in the course of experience, at a cost to the patients they are in the mean time called upon to treat; and many errors thus receive the support and authority of the profession. Many of the affections of infancy are due to improper feeding, and may be satisfactorily treated by judicious regulation of diet alone.

In the respiratory system there exists a combination of circumstances which surrounds this most important function with risks and perils unknown in after years. In the young child the chest-walls are comparatively soft and yielding. The muscular system is feeble. There is frailty with marked excitability in the nervous supply or respiratory force, and the pulmonary vascular system partakes in the impressionable nature of the vascular system in general. There is consequently found great variety in the character of the respiration consistent with health; whilst a knowledge of the signs which indicate disease becomes more important. The clinical interest in auscultation increases as the child gains in age; while, as compared to more advanced years, the sounds heard in the chest are quite idiomatic in their expression of morbid states. No one, therefore, is able to interpret correctly their meaning without very considerable experience and practice. Before placing the ear to the chest, moreover, there is much important information to be obtained by an ocular examination of the chest as to its form and the character of the respiration—information often more important than that obtained by auscultation, and which is not limited merely to the respiratory system, but affords indications also as to the constitutional state of the child. In the adult such information is more obscure, and is often lost; while many indications so obtained are peculiar to, or, so to speak, idiomatic in childhood.

The development of the nervous system is at birth complete only as regards those portions concerned in the vegetative process. All the purely animal functions are in abeyance; but the perfecting process takes place with extreme rapidity, and just in proportion to this rapidity is the liability to morbid action. The sympathetic and spinal portions predominate, and possess increased sensibility. The effect of a stimulus is therefore greater and more diffused than in the adult, giving rise to important physiological and pathological peculiarities. The condition known by the term "shock" is accordingly more frequent, and we see children succumb to a burn or scald as rapidly as do adults from the effects of lightning. All surgeons also are glad to get their child-patients safely off the operating-table, and the first few hours after the operation over. The presiding and controlling power of the encephalon is less marked, and produces the greater tendency to reflex actions, to convulsions, spasms, and some forms of paralysis. To the peculiarities of the nervous system are also to be traced many others which belong to a more general pathology.

The blood forming function demands special study in infancy. But here our knowledge is very deficient. From the activity of the glandular system it may be readily understood that there should exist an increased tendency to alterations in the blood. As a process in itself, therefore, it demands special attention in all diseases, and the great liability to rapid deterioration is a point which must constantly be kept in view in treatment. In the course of a few hours, under an acute disease, its characters may become so altered as to demand the whole attention, while the local lesion must be placed in the background. In the study of therapeutics, this peculiarity has not been sufficiently kept in view. No better illustration can I give you than in the employment of mercury. It is a general belief that children bear its administration better than adults; that they are not so liable to be constitutionally affected by it. No more ruinous error exists. Twelve grains of grey powder, or six of the green iodide, are sufficient to establish its constitutional effect in a child. But its action must not be tested upon the gums nor upon the bowels. In children one of the earliest dangerous manifestations is in producing an anæmic effect—one I have seen produced by the doses mentioned,—and for indications of which its administration must be carefully watched.

In addition to the systemic differences I have mentioned, there exists a chain of general peculiarities, which modifies and gives a special character to all morbid phenomena:—

1. There is greater activity of all the vital processes.
2. Through the extreme sensibility of the nervous system, the sympathetic relations of every part are more extensive and acute.

3. There exists with all a frailty of the vital powers, readily excited and soon exhausted.

This chain of physiological conditions produces a corresponding chain of pathological peculiarities:—

1. The exciting causes of disease act more readily.

2. Morbid action is more active and rapid, and is more liable to become diffused; the progress of symptoms also is accordingly rapid, and the physical signs evanescent.

3. Reaction takes place rapidly, and is often out of all proportion to the material lesion.

4. Reaction often suddenly becomes lowered without a favorable change having taken place with regard to the disease.

5. There may also be a want of accordance between the reaction and the lesion—such as pneumonia and pleurisy, with extensive effusion, without acute symptoms. This fact does not contradict the others I have mentioned, for when it occurs there is previous disturbance in the normal physiological relations of the various parts.

6. The frequency with which after death no structural lesion is found, or where lesion exists in one organ alone,—"death being less frequently the result of the material disorders than of the blow given to a weak organisation by a too considerable dynamic reaction." As a corollary to this last remark, I would state that, in the course of many diseases, a period often arrives when the special characters of the disease, in relation to treatment, must be submerged before the more important general conditions of the patient.

I cannot enter further at present into this subject; but in the due appreciation of these facts in their application to special diseases, and in the modification of treatment demanded thereby, you have a vast field of study before you—one which you can alone overtake by giving special attention thereto.

To understand fully, and to be able properly to treat disease as it is in children, requires more than a knowledge of symptoms and the power of diagnosing the various *local* affections. You must acquire the power of recognising the relation between the local lesion and the constitutional state. This remark no doubt holds good with regard to the treatment of diseases at all ages; but in the child, far more than in the adult, must it be constantly kept in view; and it oftener occurs that the treatment must be guided more by the general state than by the material lesion. Further, it more frequently happens that the whole question of diagnosis depends more upon what is the constitutional type and condition of the child than on the local symptoms. A child has a large tumid abdomen, and diarrhœa, with other indications of bad health. Is this tabes mesenterica, or due to a functional disorder? or is it a part of the rachitic state? In fact, in all disorders where derangements of the stomach and bowels are the prominent symptoms, the diagnosis and treatment entirely depend upon the constitutional character of the child. In another case there is dulness and harsh respiration over the upper portion of the lung. Does that indicate tubercle, or the remains of an old inflammation? A child becomes languid and unwilling to play; is dull, heavy, and irritable; the digestive system is deranged: there is irregular feverish heat. By what must you be guided in your diagnosis and prognosis?

It is from neglect of viewing disease in relation to the constitutional state that many are led into error. It is, moreover, a point upon which our books are generally deficient, the various affections being discussed in detail in reference to the organs affected. The determining the point of relation between the local lesion and the constitution is, as before remarked, one regarding which much progress has been made within the last few years.

Formerly, in children, all depraved conditions of the constitution and their concomitant diseases were put down as struma, scrofula, or tuberculosis, the terms being used in an indefinite and general way and were each regarded to mean pretty much the same thing. What Sir. William Jenner did in determining the difference between typhus and typhoid fevers has the accurate observation and clear mental power of that master-mind also done in this department of our science. The key-note supplied by him in his Lectures on Rickets and Tuberculosis bids fair to bring into harmony our confused and discordant pathological views regarding the diathetic states, and has given a well-founded distinction to the terms, the effect of which can already be traced in the writings of those who have succeeded him.

One important point is worthy of attention. The distinctions he would draw between scrofulosis, tuberculosis, and rickets, are not based upon pathological products alone; but first upon an essential difference in the histogenetic or tissue-forming process; secondly, on the clinical history; and lastly, and more as a confirming test, on the pathological results.

To many, in the reception of these opinions, is the stumbling-stone that the distinctions we would make are not absolute and universal, and that there is no hard-and-fast line that can be drawn. But is not the same thing observed elsewhere, and no such doubt exists? What absolute and universal distinction can be drawn between the animal and vegetable kingdoms? "And, however widely their more advanced members may be separated, there can be no denial that plants and animals are connected by common characters." The existence of "a most intimate and close alliance" does not negative the distinction between animals and vegetables, and can be no objection to the distinction between scrofulosis and tuberculosis when studied clinically in well-defined instances.

Before entering further on this subject, I may remark that much confusion has arisen from regarding many local diseases as scrofulous where there is no primary constitutional affection, and which are merely examples of chronic inflammation set up by local causes (Holmes on "Surgical Diseases of Children," 1st edition, p. 337). Such cases do not come under the term of diathetic diseases, and we must be careful not to argue from them. The constitution, no doubt, may become affected, but it is secondary, and shows the importance of being able to determine the relation between the local lesion and the constitutional state.

As illustrating the practical bearing of the distinctions we would draw, I would quote from Mr. Holmes' work on the "Surgical Diseases of Children." Speaking of the question of surgical interference, he says: "In such cases the distinctions above laid down become important. If there is evidence of tubercular consumption or of mesenteric disease, leading to the inference that the child is the subject of tuberculosis, it is generally undesirable to operate; and even in cases in which the prevalence of the local symptoms induces the surgeon to give the child the chance of recovery which the removal of the disease will afford, his prognosis must be very reserved. In scrofulous patients, on the contrary, the diseased parts may be removed with almost as good prospects of immediate recovery from the operation, as far as I have noticed, as in other cases, and with great benefit to the general health. In the third class of cases, where the disease, though called strumous, is really only the local result of injury, fatigue, or exposure, its removal by operation is at once followed by restoration to perfect health, and to the average expectation of life."

Tuberculosis and scrofulosis are specially diathetic diseases of early life, and should be there studied, and not through pathological anatomy alone, but rather in reference to the primary nutritive process, the modifications they give rise to in disease common to both, their symptomatic affections, and the modifications in treatment thereby demanded. In fine, it is by the clinical history more than by the pathological results that questions as to differences of constitutional states are to be determined. Moreover, it is in early life that the purest examples are met with before other latent or engrafted influences come into play, and before the tissues take on other degenerations thereby induced, and which are not met with in children. All these circumstances tend to complicate the problem and obscure the results to be gained when carried on with reference to adults only.

The general characters which represent these different constitutional states have hitherto had special reference to *diathesis*—a term which involves in many minds a special proclivity to, or latent condition of, disease. There are instances where such is the case—where every precaution will not avail to avert the development of the special morbid action. But there are others where some of the general characters are distinctly marked, yet, under ordinary circumstances, no morbid action is set up. Such characters, therefore, must be considered compatible with perfect health, and not necessarily predicating disease; but they still are found to impart an exemption to some, and greater predisposition to other ordinary affections, and considerably modify the diseases common to all. I therefore prefer to speak of these as indications of constitutional *type*—a term involving no pathological idea.

The characters of the type differ in no respect from those of the diathesis, except in degree. They are founded upon peculiarities in the histogenetic or tissue-forming power; and can best be studied while that process is most active—before the tissues have reached maturity. The necessity of taking the histogenetic character as a basis of classification of diathesis or constitutional type, and not the ultimate and often very complex results of pathological anatomy, is well exemplified in the study of phthisis in children. Two forms are met with, each belonging to different types. Studied in the pathological theatre alone, they give rise to endless debates, and result in nothing but confusion; but studied clinically, essential differences are established. To quote from a recent writer: "These two types of body," in which phthisis occurs, "are very distinct; but they are not antagonistic. Tubercular formation may occur as an accompanying phenomenon of either, and either may be marked by that form of pulmonary phthisis known by the name of scrofulous pneumonia. But of the two, in the tuberculous diathesis there is an especial tendency to the former disease; in the scrofulous diathesis, to the latter."*

In one typical order the histogenetic process is characterised by a precision and exactness of execution, without any superabundance of material; imparting a fineness of texture and slenderness of build: and just in proportion as the character of precision and fineness increases, so the diathetic tendencies increase.

In another type the characters are a lesser degree of precision, the employment of a larger amount of material, with consequently a coarser and thicker or looser texture and a heaviness of build; and just in proportion as these characters increase is the diathetic state developed, it may be under an inherited or an acquired influence.

Before determining the constitutional character of a child, in addition to these general peculiarities must be taken others obtained from the succession and rate of the various evolutions of development, according to the standard before referred to, as regards dentition, the muscular powers, and the mental faculties. In these these are certain deviations quite consistent with health, yet of great practical import. When the period of such changes is past, it is often necessary to inquire particularly of the mother regarding them; and without thus correcting the impressions derived from the general physiognomy you are apt to fall into error by leaving out an important item —it may be good or bad—in your calculation. Thus both scrofulosis and rickets are marked by the characters of the second order, but there are important differences between them as regards dentition and ossification; and while in the first the characters are more likely to be permanent, in the second the defective character of nutrition generally passes off as the development advances; each also has its own distinct pathological tendencies.

The characters which mark the healthy nutrition of the individual continue through, and determine the nature of the defects of that process under the action of morbid agencies. By an inate difference in character of that power which presides over the development and determines the form and duration of life of every tissue can we alone explain the differences in effect of one and the same influence in different cases. Thus improper nourishment and other bad hygienic influences do not develop rickets in every child. In some cases the bones, instead of becoming large and soft, are extremely small and firm, while their epiphyses are scarcely if at all larger than the shaft. In others the bones are unaffected, but the skin and subjacent tissues, with the lymphatic glands, take on diseased action.

This constitutional character does not merely determine the form, or give a predisposition to certain affections; but I believe that all diseases, whether general or local, receive the impression of the constitutional type. This can be easily observed in inflammatory affections open to inspection, as in catarrhal ophthalmia and affections of the throat. In the first class, which I before described, the characters are first those of irritation, without any great relaxation, followed, when the action is over, by a speedy return to the normal state, or with a weakened functional power without change of structure. In the second, irritation is less severe, and soon over; but relaxation and tumefaction takes its place, with a tendency to become chronic, the structural change remaining long after the primary action has subsided. In all affections thus open to inspection, material characters are found to modify the morbid action according to the constitutional type and conditions. In diseases, however, which we cannot so observe, the same differences have not yet been discriminated; but more extended clinical observation will, no doubt, increase our power in this direction, and it must ever be by studying them in the light of the constitutional type. Of this I am certain, that bronchitis, pneumonia, and all other internal affections differ in character, when occurring in tubercular, scrofular, rickety, or syphilitic children, as much as do inflammations of the eye. Our treatment also must ever be faulty if we do not regard the constitution in which they occur.

At times there may be some difficulty in determining the predominant constitutional character from those of healthy nutrition alone; but the want is often supplied by studying those of the pathological processes when they arise. We can also often infer the character of the altered nutrition of parts hidden from sight by those of tissues we can see, or from those known to belong to the special type. Just as we infer the character of a nervous affection in a person suffering from some external syphilitic lesion, so we may draw conclusions as to the inflammatory nature in the chest of a person bearing the marks of a scrofulous or a tubercular constitution.

Whooping-cough affords an excellent subject for therapeutic study, viewed in the light of which I now speak. The characters before mentioned may also here be traced in different cases of this disease. In the one class it is increased irritability, or a state of irritation, without any great relaxation; in the second it is relaxation and tumefaction; while in a third neither of these characters specially predominates, but the defect is that of depression, with great tendency to blood degeneration. The indications for treatment ought to be derived from these primary conditions, and not from such complex expressions as spasm, or frequency and severity of cough, &c., as each may be produced under widely different states of the system. No disease is more complex in character, and none shows better how vain it is to attempt always to meet the same symptoms with one remedy. Guided by the characters alluded to, remedies of directly opposite nature are indicated in different cases; and we have some explanation of the very various results obtained by those who use indiscriminately the one remedy in all cases. Past investigation into the therapeutics of whooping-cough has failed in a great measure from no notice having been taken of the constitutional state of the child with whom one remedy or another has been tried. Not in this disease only, but in all others, if we are ever to obtain accuracy, must increased attention be paid to this point in our observations; and this must be my apology for having entered so largely on the subject on this occasion.

Let me make a few remarks, in conclusion, on the general subject of therapeutics. In this department, also, great and rapid progress has of late been made, as may be judged by the differences between the earlier and later editions of works on diseases of children. Here, also, the importance of a special study is manifest. It is not to acquire the knowledge of the doses proportionate to the age, and how to make them palatable, that your study must be confined. If you recall to mind the great differences in the physiological relations of childhood, you will see how necessary it is that treatment should be adapted not in amount merely, but also in kind.

To take for illustration the one point of reaction. Remember what I told you—how it is often excessive and out of all proportion to the material lesion—how symptoms of the most alarming character may arise from simple causes,—and you will at once see the necessity of being on your guard lest the apparent urgency of symptoms betrays you into too heroic treatment. Again, remembering how liable the frame is to succumb, not so much from the amount of lesion, as from the blow given to the frail organisation,—you will see how guarded must be your efforts to allay the excess of action. Remember, too, the great rapidity of disease in children; and while you carefully refrain from undue interference, you must be ready to act promptly and with confidence when required.

There is in our treatment generally too great a tendency to regard all the phenomena of disease as necessarily morbid, and to attack them by our remedies; whereas they are often physiological in nature, and dependent upon the physiological relations of the various organs. In children these are exceedingly intimate; and I believe much injury is often done by the exhibition of antimony and other depressing agents to subdue fever, which in amount is but the expression of the physiological peculiarity of the child. From the greater liability to, and the great danger of, the depression which follows, it is better to meet the increased action by sustaining from the first the vital powers, than by the leveling-down process of depressants. You will accordingly find that in pneumonia and bronchitis, for instance, constant hot fomentations and nutritious diet, and anodynes when required, have supplanted the use of bloodletting, antimony, and mercury. These agents, however, are not to be entirely discarded—each has its place; and this is what you have to study—to know

> "the seasons when to take
> Occasion by the hand."

Mercury, the much-abused remedy both in lecturing and in practice, is one of very great utility, even in scrofulous affections; but you will nowhere find in books the proper indications for its employment.

The heroic use of antimony is now greatly given up, but I feel confident that its employment in small doses as an expectorant and diaphoretic is still too general, and that as such it is contra-indicated by the peculiarities of children of which I have spoken, while the same effect can be obtained by less dangerous remedies. With regard to expectorants in general, I believe their division into depressants and stimulants, and the opinion that the latter class should never be used while the affection is acute, are fruitful sources of harm. But I cannot at present enter into these questions. I trust, however, that I have said sufficient to show that a special study of therapeutics also is necessary, and that a knowledge of our art, as applied to the adult, is insufficient and unreliable when brought to bear on disease under different physiological relations. The captain who can skilfully ride through the storms in the wide ocean is not the best to pilot his vessel through the intricate channels of our coast; and there are many sunken rocks and rapid currents around the shores of time which endanger a frail bark before it gains the open sea of life.

Clinical Lecture
ON
PARALYSIS WITH APPARENT MUSCULAR HYPERTROPHY

By **Balthazar W. Foster**, M.D.,
Physician to the General Hospital, and Professor of Medicine in Queen's College, Birmingham.

Gentlemen.—You have lately had the opportunity of observing three cases of a peculiar form of paralysis, which you have often heard me speak of in the wards as Duchenne's paralysis. Dr. Duchenne (de Boulogne), to whom we owe our chief knowledge of the disease, has called it *Paralysie musculaire pseudo-hypertrophique*; and the English equivalent of this name is probably the best descriptive title of the affection. The history of one of the cases, a very typical one, I will now read, and we shall then be in a position to clearly recognise the special features of the disease, and to learn in what respects it differs from other conditions with which it has been hitherto confounded.

Some three months ago a man brought a dull strumous-looking boy, aged nine years, into the out-patient room, to be treated for a weakness in the lower limbs. He stated that the boy walked imperfectly; that he often fell down, and could not raise himself again without assistance, and could not get up stairs; "but," said the father, "his health is good, and his limbs are not wasted—he has capital legs." These statements attracted my attention. The boy was stripped, and then the gastrocnemii and glutei muscles were seen to be greatly enlarged. They were firm to the touch, and stood out in bold relief when contracting. As the boy stood erect, the lumbo-sacral curve was exaggerated, and the legs were widely separated. His gait was waddling and straddling, the body balanced on each leg alternately; and as he walked gingerly on his toes, the heels never touching the ground, the effect was most grotesque. The boy was admitted, and the following history obtained from his parents, who are both healthy, have never had syphilis, and have no history of paralysis in their families. The patient is one of eight children, of whom one died in infancy of scarlatina. Two boys older than the patient are strong and healthy, and a boy and two girls younger are also healthy, but the youngest is weakly. The mother says the boy in the hospital was a healthy, well-developed baby; that he has never had convulsions or any kind of fits; and has never been ill, except with diarrhœa (which he had badly) and measles. He was, however, very weak as an infant on his legs, and was quite two years old before he walked alone, and for a long time afterwards was always stumbling and falling as he walked. He improved in this respect, and was able when six years of age to walk nearly a quarter of a mile, resting frequently and supporting himself by the wall. He was sent to school, but was very dull; and finally was allowed to remain at home, as the other boys frequently pushed him down in order to observe his grotesque and futile efforts to raise himself. He was never able to run or mount the stairs. When six years old, his legs began to increase in size. His arms were always weak; he could never cut up his food like other children. His appetite was always good. He never lost power over the bladder and rectum.

In the hospital the boy was found to be dull in intellect, but cunning; his speech was slow, his hearing slightly defective, and his vision myopic. The physical examination of his chest and abdomen detected nothing abnormal. The urine was healthy; the bowels regular. The appetite was good; during his stay in the hospital he gained flesh. The teeth were irregular; the central incisors slightly serrated at their margin; the decayed stumps of the first lateral incisors unshed. On examining the locomotor system the integument of the lower extremities was noticed to be remarkably mottled, patches of purplish color alternating with white. This condition did not extend to the trunk, and was but slightly marked in the upper extremities. The bones and joints were well formed. The muscles of the head and neck were apparently healthy; those of the upper extremity were small and flabby, especially the flexor muscles of the arm and forearm. The pectorals were also small. The erector muscles of the spine were hypertrophied and hard. The glutei muscles were also greatly hypertrophied; the muscles of the thigh were firm, but not increased in size. The muscles of the calf were greatly enlarged; the body and the two heads of the gastrocnemii showed in bold relief during contraction beneath the thin skin which covered them. The calves measured eleven inches in circumference; the thighs, twelve and a half. The muscles of the calf contracted with considerable power, as estimated by the resistance they offered to flexion of the foot; while, on the contrary, the flexor muscles of the foot were easily overcome. The muscles of the upper extremities were found to be feeble, the grasp weak on both sides, and the power of the bicipites small. When the boy stood erect the feet were separated about ten inches; the heels did not touch the ground; the boy could not stand on his heels even when supported, he naturally stood and walked on his toes. His equilibrium was so unstable that a very slight touch sufficed to upset him, and when down he could only occasionally raise himself without assistance. He generally crawled to the nearest bed in the ward, and placing his feet against the leg of the bedstead or part of the wall, as a *point d' appui*, raised himself first on his hands and feet, then, by placing a hand on each leg alternately, he, as it were, climbed up himself, and gained the erect posture, the spinal erector muscles bulging largely all the time, but powerless to aid. When the boy fell, he fell all in a heap; in sitting down he sat down suddenly, and could only rise again by using his arms. After walking across the ward two or three times the peculiarities of his gait were exaggerated, the efforts more labored, and the perils of the journey increased. The photographs before you give a very fair idea of the boy's figure. (Figs. 1 & 2.) In one respect they are very imperfect: the feet are placed too closely together. The artist when he brought the photographs to me, remarked that "it was a very troublesome job, for the boy repeatedly fell down." In reality the artist had been trying to make the boy stand with his heels too close together, and after repeated trials had found it impossible to obtain any closer approximation than that seen in the figures; whenever the basis of support was still further narrowed, the boy swayed about and fell.

Fig. 1.

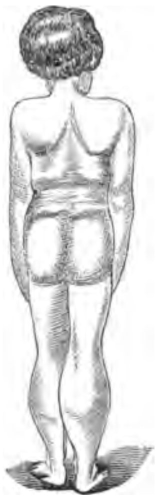
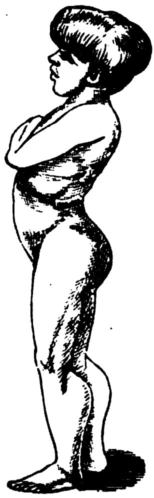


Fig. 2.

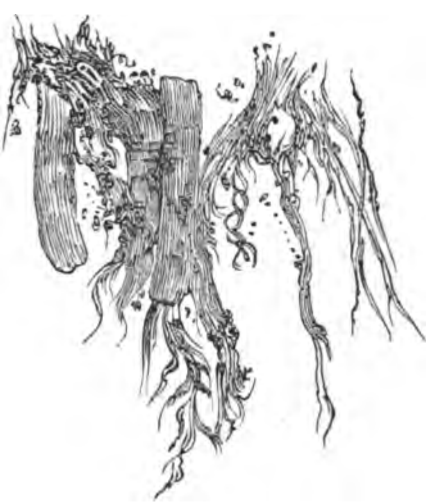


Such is a pretty full account of the case. The diagnosis was clear. The enlarged and hardened muscles, the history of previous weakness of the legs coming on without appreciable cause, the separation of the legs in the erect posture, the talipes equinus, the curved back, and the peculiar gait, formed an assemblage of symptoms too complete to admit of a doubt.

Duchenne, in his admirable memoir on this subject, has divided the course of the disease into three stages: 1st, of muscular weakness; 2nd, of muscular hypertrophy; 3rd, of general paralysis. In the case before us we have a distinct account of two of these stages. The first stage varies in duration: it lasted in this case from the earliest infancy up to the sixth year. In the other cases you have seen it began later: in one it lasted between two and three years; in the other, scarcely as many months. The second stage begins with hypertrophy, commencing in the calves, and extending to the gluteal and lumbar muscles. Sometimes nearly all the muscles are affected; but the enlargement is more commonly limited. In some cases the hypertrophy is not considerable, and may escape the attention of parents,—as in the case of two brothers of one of the patients here. This stage may last for years; the muscles enlarge for a year or so, and then remain stationary, their power not being diminished by the enlargement. In the third stage the loss of muscular power increases, the upper extremities, if hitherto intact, grow weaker, and the enlarged muscles decrease in size. The patients cannot stand; they sit or lie down, and gradually lose all power of motion, till at last some intercurrent disease carries them off. The boy whose case I have read is now entering this stage; his muscular power is decreasing, and since he has left the hospital this has been very decided.

The question occurs,—How is it that muscles, apparently so much increased in size, can effect so little? The muscles of the gluteal region were enormous; and yet the alternate balancing of the body on either side indicated feebleness in the middle and small gluteals. By means of the lumbo-sacral curve, the shoulders and upper part of the trunk were, in the erect posture, placed in a position posterior to the sacrum, and the line of gravity thus thrown backwards. When this curve was diminished, the boy fell forwards, and could only raise himself by resting his hands upon his thighs, and jerking himself backwards, the hypertrophied spinal muscles bulging all the while in impotent contraction. To those who first observed the disease, the dead-house seemed the only place where a satisfactory answer could be obtained; but German observers, with an enterprising boldness, cut out pieces of muscle from some of their patients. Duchenne, however, adopted a more humane plan, and devised a little instrument—the "emport-pièce histologique,"—by means of which specimens of muscle can be easily and almost painlessly obtained from the living subject. I procured this instrument; and my colleague, Mr. Bartleet, removed a specimen for me from the gluteal region. The piece of muscle was very pale; and after it was treated by chromic acid, as Duchenne recommends, the microscope showed us a considerable increase in the interstitial connective tissue, and a remarkable development of wavy fibrous tissue. The muscular fibre did not appear to be much altered; fat-globules were seen near to, but not connected with, the muscular fibre. A second specimen was examined by Professors Bartleet and Bracey; and to the latter I owe the drawing (Fig. 3) which shows the muscular fibre almost wholly deprived of transverse striation, but with distinct longitudinal striæ, and surrounded by a quantity of wavy fibrous tissue, very like yellow elastic tissue; a few fat-globules and small cells were also visible between the fibres. Duchenne has figured similar appearances, and attributes the hypertrophy and hardening of the muscle to this developement of interstitial connective tissue. The wavy fibres, he suggests, may be formed in some cases by degenerated sarcolemma. The essential change in all the muscles appears to be this increase of connective tissue. In the earlier stages the transverse striation is only slightly affected. Now these microscopical appearances distinguish the affection from one with which it has been hitherto confounded—"wasting palsy,"—in which the muscular degeneration is decidedly fatty. Wasting palsy, moreover, is not frequent in infancy; but when it does occur, it begins by attacking the muscles of the face, and follows a slow and descending course, dissecting out separate groups of

Fig. 3.



muscles. The wasting is also in direct proportion to the loss of power. Infantile paralysis may be mistaken for the disease under notice; but the sudden invasion, the occurrence of febrile symptoms, and the completeness of the paralysis, at first, are generally sufficient to distinguish it. The electro-muscular contractility is also impaired, while in the earlier stages of paralysis with apparent hypertrophy it is unaffected. Our observations coincide on this point with those made elsewhere. You might be easily led to suppose, from the intellectual dullness which has marked our patients here, that the seat of the primary lesion in these cases is in the brain. This view was at one time held, but post-mortem inquiry has failed to support it. In the case before us, a careful ophthalmoscopic examination made by Professor Solomon gave only negative results. The peculiar state of the capillary circulation on the surface of the lower limbs, which has been mentioned, has also been remarked in Germany, and the prevailing hypothesis at present is that this condition indicates some lesion of the vaso-motor system to which the disease is due. That mechanically induced congestion is generally followed by the excessive development of connective tissue is a law which has much evidence in its favor, and the sclerosis of the muscles in these cases may be another example of its action. The observations made on the boy when in the hospital generally showed the temperature of the thighs to be a little above the normal standard, usually coinciding with that of the axilla. I had at one time an idea that these cases might possibly be another manifestation of hereditary syphilis, and consequently a careful examination of all the patients and their families was made. The teeth of the boy whose case I have read were irregular, and the central incisors slightly serrated, but by no means notched. In only one case has a fairly characteristic central incisor been seen. In none of the three families to which the children belong has a history of syphilis been found; and in none of the brothers and sisters of either of the patients have syphilitic teeth or traces of keratitis been discovered. As far as our present observation goes, the disease is confined to children. It may occur in infancy, or it may appear as late as year. There can be no doubt pressure upon the character of the malady in some cas its the hydro- whose case we have considered to-day tension to a healthy family; but another boy, who w. Ac- the hospital some months ago, was the third his family affected. In this instance the two other brothers became completely paralysed, and were carried off by intercurrent diseases at sixteen and seventeen years of age. According to the mother's statement one of her brothers was similarly affected, and died when thirteen years of age. The girls of this family have escaped, and continental experience points to the much greater frequency of the disease in boys.

Next as to treatment. Paralysis with apparent muscular hypertrophy, when once fully developed, tends surely and steadily to a fatal termination. All the evidence hitherto collected confirms this. There is, however, according to Duchenne, a saving clause to a complete admission of powerlessness on our part. He has succeeded in curing two cases in the first stage by faradisation of the muscles, which acts most probably by rendering the capillary circulation more active, and lessening the venous stasis, which favors the production of connective tissue. Our patient, admitted, as he was, at an advanced period of the second stage, was treated with iodide of potassium, iron, and cod-liver oil. He improved for a few weeks after admission, probably more on account of the improved diet than the drugs. The daily use of magneto-electricity was afterwards tried, but no good results were obtained, and when discharged the boy had certainly not improved. When the pathogeny of the disease is more advanced our therapeutics will be more perfect. Careful observation will achieve this, and each of you may assist in the work.

Original Papers.

ON THE STRUCTURE OF THE ADULT HUMAN VITREOUS HUMOR.

By David Smith, M.D., M.R.C.S.

(Continued from February No.—p. 89.)

THE RELATION OF THE VITREOUS HUMOR TO INTRAOCULAR TENSION.

As the vitreous humor is one of the chief agents which contributes to the fulness of the globe of the eye, the relation which it bears to the healthy hardness of the latter comes next under consideration. But as the aqueous humor and crystalline lens also contribute a small share in the production of intraocular tension, these last must also be passed in review during the discussion.

Intraocular tension is essentially based upon the distending force of the fluids of the eye, enclosed by membrane and tissue, which give them the character of a spherical solid body. It presupposes two conditions—first the distending force of the fluids; and, second, the reaction of the membranous sphere upon the fluids. Both of these forces are in constant operation in the healthy eye, and between them, in health, an equilibrium exists,

nately, he, as it w is the ascendancy. The last
gained the erect considered first.
cles bulging
aid. W *ciples of action of the Limiting Mem-*
sittin *s of the Eyeball upon the Humors of the*
ye.

The contents of the eyeball—the aqueous humor, crystalline lens, and vitreous humor—are enclosed within a structureless capsule, which serves to bound and limit them, and unite them into a glassy sphere (Fig. 5). That segment of the sphere which corresponds to the posterior hemisphere goes under the name of *hyaloid membrane* (B); that in the anterior hemisphere, the *posterior elastic lamina of the cornea* (A). These membranes are united in the ciliary body (D), which throws the two segments into a sphere. This union may be demonstrated by making a section of the tunics of the eyeball in their thickness, parallel to the course of the ciliary processes. In such a preparation the posterior elastic lamina (A), after surrounding the anterior chamber in front, as a homogeneous structureless membrane 1-2000th to 1-3000th of an inch in thickness, is observed, at the margin of the cornea, to become fibrous and to divide into three parts. One part encircles the rim of the anterior chamber, limiting the fluid which it contains, and passes into the base of the iris and into the ciliary body; in the latter of which situations it becomes blended with the fibrous processes of the zone of Zinn. Of the other parts, the greater gives origin to the ciliary muscle, which is also inserted into the ciliary body; while the lesser portion (E) enters the sclerotica, enclosing the canal of Schlemm. By the latter attachment the sclerotic is indirectly connected with the ciliary circle. Again, the hyaloid membrane (B), after encircling the posterior hemisphere, as a thin transparent membrane is firmly bound down to the ciliary body; where it increases in thickness, and goes under the name of the structureless membrane of Zinn (C) from its discoverer. This union is effected by strong fibres which are given off from the external surface of the latter, pass into the substance of the ciliary body, and meet those already referred to, coming from the posterior elastic lamina of the cornea. Thus, then, these two membranes become united in the ciliary circle, and form a structureless sphere, the function of which is essentially that of limiting the humors which it encloses. For brevity of description I shall call this sphere the *aqueous capsule of the eye.*

Fig 5.

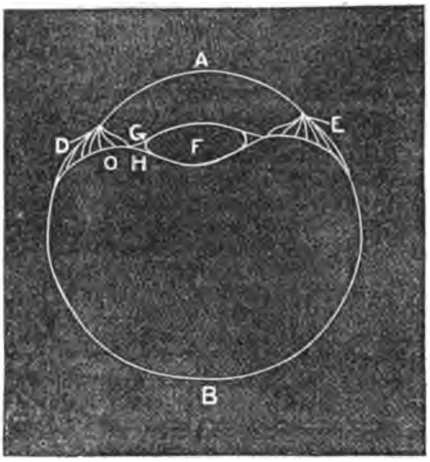


Diagram of the Aqueous Capsule of the Eye.

A, Posterior elastic lamina of the cornea. B, Hyaloid membrane. C, Structureless membrane of Zinn. D, Union of the membranes of the two hemispheres in the ciliary body. E, Fasciculus of fibres which enclose the canal of Schlemm. F, Crystalline lens. G, Ligament of the anterior capsule. H, Ligament of the posterior capsule.

The parts contained within the aqueous capsule are, the aqueous humor, iris, crystalline lens, and vitreous humor. It is divided into two segments by the lens (F) and its ligaments (G H); but the division is such as to admit of a certain amount of imbibition between the two hemispheres. This latter fact is of the less importance, as the fluid in the two hemispheres is chemically and physically alike, comes from the one source, distends both hemispheres with an equal degree of force, and its amount in both is regulated by the same principals.

The vitreous tissue in the posterior segment, and the posterior elastic lamina of the cornea in the anterior segment, confer upon the aqueous capsule the property of elasticity in a high degree, so that it is able to resume its original shape after it has been altered by any of the physiological actions of the eye. The elasticity of the vitreous tissue has been already averted to (vol. ii. 1868, p. 378), Further evidence that is possessed of this physical property might be multiplied. I will only mention one other example. Place a fragment of vitreous between two slips of glass, previously rendered opaque by a week solution of nitrate of silver, to enable its action to be more readily observed. On pressing the glasses in contact the vitreous tissue is observed to expand, and on removing the pressure it instantly regains its former size. The hyaloid membrane is not extensible, though it bears a greater strain than might be at first supposed. The elasticity of the limiting membrane of the anterior hemisphere is a well-established fact. The elastic structures of the aqueous capsule of the eye contract upon the contained fluid, and give it to the character of a solid sphere. In the healthy state of parts it is always full, offering in front a smooth surface for the perfect refraction of the rays of light, and behind for the close adaptation of the retina which is spread out upon it.

But not only is the aqueous capsule, in health, always full, but the fluid which it encloses subjects it to a distending force, against which it reacts in an equal degree. The distending force to which the anterior hemisphere is subjected is often illustrated in practice in cases of ulceration of the cornea. The posterior elastic lamina, in these cases, in losing the support of the lamellated tissue in front, may often be observed to protrude through the bottom of the ulcer in the form of a vesical. This is caused by the distending force of the fluid within. The distending force of the vitreous body is illustrated by the pressure effects on the central vein of the retina. In the normal state of parts the central artery and vein of the retina, as they pass over the optic disc, are raised above its surface, and are in direct contact with the hyaloid membrane, even projecting somewhat into the substance of the vitreous. In such circumstance the artery does not show any signs of pulsation, but the vein does in many cases; and in all the latter is flattened by the pressure of the vitreous, and pulsation is easily provoked in it. Now, the pulsation of bloodvessels, in any case, arises from the resistance which the walls of the vessels or outlying structures give to the distending force of the blood. While, in the eye, therefore, the distending force of the vitreous humor is insufficient to compress the arteria centralis retinæ to that degree which will give rise to pulsation, it is sufficient to flatten the vena centralis retinæ, and to give rise to pulsation, or an intermittent current of blood over the optic disc. As the vein, in this case, is as much subjected to the pressure of the vitreous as if it were in the centre of the humor, an index of the distending force of that body is thus obtained, which may be roughly estimated as equal, or slightly superior, to the lateral pressure of the blood in the smallest veins.

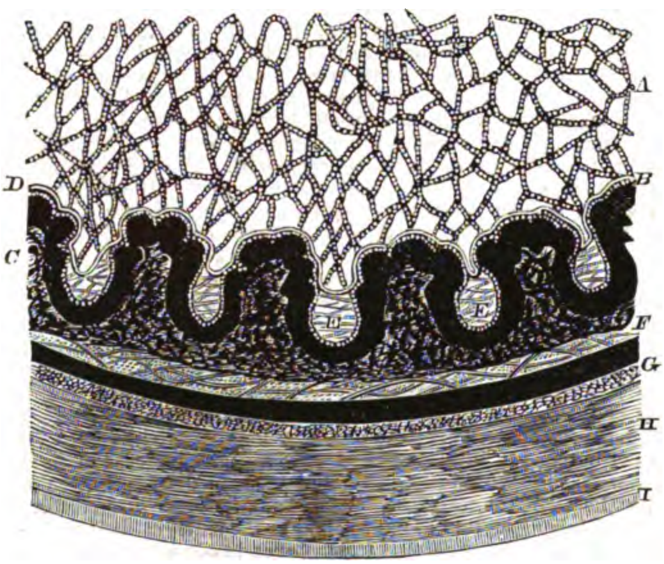
The distending force, however, to which the aqueous capsule is subjected by the fluid which it encloses is confined within the capsule itself; outside the capsule the distending force ceases to exist. This may be illustrated by the following experiment: In a dying person, or in a body immediately after death, when the heart is either failing in power or has ceased to beat, the only obvious physical difference in the eye in such a case and that of a person in the vigor of life is, that the choroid has partially emptied itself of blood, and the sclerotica has become soft from the want of support within. In such circumstances, if pressure be made on the eyeball with the two forefingers, the vitreous is felt as a hard globular body within the eye, apparently of its normal position and size. Now if the vitreous communicated any distending force beyond the hyaloid membrane to the outer tunics of the globe, or if the latter reacted by an elastic force upon the vitreous body, the tension of the eyeball would not diminish in the ratio of the weakness of the heart's impulse, but the place of the receding current of blood would be taken, in the one case, by the distending vitreous, in the other by the contracting tunics. That the distending force of the fluids of the eye is borne entirely by the aqueous capsule and structures within it, is also deducible from the difference between the form of the eyeball in health and that which it assumes in some diseases. In the normal eye the aqueous capsule forms a sphere (of which the cornea constitutes a segment), the radius of which is somewhat less than that of the sclerotica, and which cuts the latter at its junction with the cornea. The cornea therefore is more convex than the sclerotica, and at the line of junction a slight depression exists, on account of the angle which the two structures form with each other. The sclerotica forms no part of the sphere, and therefore can sustain no part of the distending force of the fluids of the eye; for if it did, the cornea and sclerotica would be segments of a sphere having the same radius. But when the aqueous capsule becomes enlarged by a superabundance of fluid, such as occurs in glaucoma, the lesser sphere (the aqueous capsule) becomes enlarged, so that the distending force formerly borne by it comes to bear upon the sclerotica: in a word, the lesser sphere merges into that of the sclerotica, and as a consequence, the cornea takes on the curve of the latter tunic, the depression which normally exists at the junction of the two structures becoming obliterated.

As the distending force in both hemispheres of the aqueous capsule is the same, pressure upon the cornea with the two forefingers elicits the hydrostatic pressure, and consequently the tension to which its entire circumference is subjected. Accordingly, the tension of the aqueous capsule may be ascertained by causing the person under examination to close the eyelids, on the upper of which the surgeon places his two forefingers, and presses upon the cornea as if he were *examining for fluctuation.* The resistance which the cornea gives to the pressure of the finger is an index of the distending force to which both hemispheres of the aqueous capsule is subjected. The tension of the cornea in health should be first learned, and used as a standard, to which the exalted or diminished degrees of tension which it acquires in various diseases may be compared. The formulæ first adopted by Mr. Bowman for noting the tension of the sclerotica may be employed also for the cornea, but as these are well known to ophthalmic surgeons I need not refer to them here.

There still remains for consideration a part of the aqueous capsule, which is of vital importance to the healthy tension of the globe, and for the explanation of some of the physiological actions of the eye.

In the healthy eye, the aqueous capsule, as has been said, is always full; but the membrane which surrounds the posterior hemisphere (the hyaloid) is inextensible, so that a slight increase of fluid would rupture it, and produce disorganisation of the retina, which lies upon its outer surface. As rupture of the hyaloid is a condition which probably rarely happens, even in considerable distension of the vitreous cavity, the question naturally arises, How is this untoward circumstance prevented? This, as well as other questions relating to intraocular tension, is solved by a knowledge of the structure and actions of the ciliary body. To understand this, however, it will be necessary, first to enter shortly into the consideration of the elements which go to form the structure of this important part. Make a vertical section of the tunics of the eyeball in their thickness, one-eighth of an inch from the margin of the cornea, and transversely as regards the ciliary processes (Fig. 6). In the substance of the ciliary body, and between the layers of the bloodvessels, there are observed bands of elastic tissue (F) the fibres of which have an annular direction to the front of the globe, and have points of attachment at short distances, so that by contracting they diminish the diameter of the ciliary body. Fasciculi of the same tissue are observed in the sulci of the ciliary processes (E) which pass between and connect the adjoining ridges of the latter, the evident function of which is to co-operate with the annular fibres above referred to in approximating the ciliary processes. As the zone of Zinn (B) is not an elastic membrane, it cannot stretch as the ciliary processes separate; but to make up for this apparent deficiency, it dips into the sulci between the ridges, becoming tense when the latter separate, and loose when they approximate. Besides these structures, all the tunics of they eyeball, without exception, have a connection with the ciliary body: the retina by means of the granular membrane (D) described by Bowman; the choroid by means of the ciliary processes; the sclerotica indirectly by means of the fibres proceeding from the posterior elastic lamina, and which enclose the canal of Schlemm (Fig. 5, E), and the cornea which, with the ciliary body, forms part of the aqueous sphere itself. The ciliary body is also the part from which the humors of the eye are replenished. The multiplicity of parts which enter into the construction of the corpus ciliare confer upon it important actions which we will now discuss.

Fig. 6.



ection of the Tunics of the Eyeball near the cornea, and transversely to the ciliary processes.

A, Vitreous tissue. B. Structureless membrane of Zinn. C C C C. Ridges of the ciliary processes. D, Granular membrane—the continuation of the retina upon the ciliary processes. E, Elastic tissue between the ridges of the ciliary processes. F, Part of the substance of the ciliary body teazed out, showing the annular elastic fibres between layers of the bloodvessels. G, Cut ends of the fibres of the ciliary muscle. H, Sclerotica. I. Sclerotic conjunctiva.

(*a*) The ciliary body, contracting by virtue of the elastic fibres which it contains, must act equally upon the posterior elastic lamina and the hyaloid, and therefore maintain an equal tension in the anterior and posterior hemispheres of the globe; for it forms the connecting link between the two. The posterior elastic lamina and the vitreous tissue themselves exert a certain degree of resiliency upon the fluid of the aqueous capsule, but they are powerfully assisted in their operation by the elastic structures of the ciliary processes. It is by these combined forces that the aqueous capsule of the eye acquires the character of a solid sphere with the least expenditure of distending force within. The posterior elastic lamina, being supported in front by the lamellated tissue of the cornea, is capable of resisting a greater degree of intraocular pressure than the hyaloid of the posterior hemisphere. This is important in so far as the ciliary muscle takes its origin from it at the margin of the cornea, and it enables us to explain why effusion takes place by preference into the posterior hemisphere rather than into the anterior, in cases in which the disposition to effusion into both hemispheres is otherwise equal.

(*b*) The elastic property of the ciliary body shifts upon itself a great part of the distending force of the vitreous body, and prevents the delicate retina from being compressed between the vitreous on the one hand, and the resisting overlying tunics on the other. A provision of this sort is necessary, for the retina is composed of elements extremely brittle. The *rods* more especially have this property, which are supposed by their vibrations to give rise to the perception of light; and in the whole extent of the retina they are arranged in point of direction parallel to the distending force of the vitreous. If therefore the distension of the vitreous fell upon the retina, the rods, in opposing their slender stems to its full force, would inevitably be broken. Again, a very slight pressure upon the retina is found to produce great disturbance of its functions. This may be observed by pressing the finger on the anterior part of the eyeball, the merest touch of which is communicated to the posterior hemisphere of the globe, and causes a luminous spectrum to appear before the eye. The same effect is produced in diseases which induce much distension of the hyaloid membrane, or increased fulness of the choroid. Now it has been already shown (page 416) that the vitreous within the hyaloid membrane does possess a distending force, but that it is prevented from being communicated beyond the hyaloid membrane and from compressing the retina. This is mainly owing to the elasticity of the vitreous tissue and ciliary body, which acts in the following manner. The highly elastic vitreous tissue, in springing from the ciliary processes, is surrounded by the hyaloid membrane, which is also bound down to the same part; but the hyaloid is perfectly inextensible, in which case the distending force of the humor is thrown back upon the ciliary processes and causes them to dilate. This is the only yielding part of the aqueous capsule in the posterior hemisphere, and therefore the pressure of the vitreous falls upon a part practically outside the retina.

But the ciliary processes contain numerous bloodvessels which are liable to be compressed. The pressure of the vitreous, in falling chiefly on this part, evades the vessels of the ciliary processes by the arrangement of the zone of Zinn. The vessels of each ridge (C) pass almost in straight lines from behind forwards, leaving the interspaces free of vessels. The interspaces are spanned by elastic fibres (E), which allow the processes to separate by slight pressure from within; and the zone of Zinn (B) in dipping into each of the furrows, allows the distending force of the vitreous fluid to be applied in a wedge-like form to the spaces where no vessels exist.

Thus, by the elastic structure of the corpus ciliare, are avoided the injurious consequences which would result if the pressure of the vitreous humor were applied equally over the whole circumference of the posterior hemisphere; for in front of the *ora serrata* the true retinal elements have ceased to exist, and here also a provision obtains whereby its bloodvessels are not compressed.

(*c*) The ciliary body is a movable structure which, by expanding and contracting, accommodates, within certain limits, the capacity of the aqueous capsule to variations in the amount of fluid. It is probable that the amount of vitreous fluid varies somewhat in health; at all events, it is certain that it does so in disease; and yet in either case we do not find slight increase or diminution of its amount producing much disturbance of vision, such as we would expect if the retina were subjected to variations of pressure. The elasticity of the ciliary body suggests the explanation. The manner in which it accomplishes this may be practically illustrated by observing the change of shape which takes place in the vitreous body during its maceration in water. For this purpose an eye of one of the larger quadrupeds is best, as in it the effects produced are more readily observed than in the human eye. Let the tunics of the eye of such an animal be removed from the vitreous body, so as not to disturb the plaitings of the zone of Zinn, and let the vitreous, with the crystalline lens enclosed in its capsule, be macerated in water to which the least quantity of some preservative fluid has been added. After a few days the anterior facing of the hyaloid becomes more distended with fluid, the crystalline lens in its capsule is advanced forward, the fibres which formerly bound the plaitings of the zone of Zinn have given way, and the plaitings themselves have become obliterated; in fine, the vitreous body has absorbed some of the water in which it is macerated, and has distended its anterior facing while the hyaloid which corresponds to the retina has, to all appearance, remained the same. And though the ciliary processes cannot be seen by an observer in the living eye, the changes which take place in the shape of the globe, and in the position of some of its contents, enable us to infer that the former expand and advance forward when the vitreous becomes superabundant. As has been already stated, the aqueous capsule (or lesser sphere of which the cornea forms a segment and into which the ciliary circle is woven) bears the distending force of the fluids of the eye; but when the vitreous is increased the lesser sphere necessarily enlarges, and ultimately merges into that of the sclerotica, so that the pressure is now borne equally by the cornea and sclerotica. As a consequence of this, the depression which normally exists at the junction of the cornea and sclerotica becomes obliterated, the crystalline lens, which is attached to the ciliary circle by ligament, is dragged forward through the pupil, and the iris is pressed nearly in contact with the cornea—changes which could hardly take place without the ciliary processes expanding and advancing forwards as the pressure within the hyaloid increases from the accumulation of fluid behind. The changes here represented are those observed in the advanced stage of acute glaucoma, and vision in such cases may be nearly destroyed from pressure on the retina; but every variation in the distension of the hyaloid occurs in the earlier stages, and as showing the conservative action of the ciliary body in warding off the increased pressure from the retina in the slighter forms, the crystalline lens may be somewhat advanced, the tension of the anterior hemisphere considerably increased, accompanied with some flattening of the cornea, but in which no excavation of the optic disc has occurred, nor hardly any impairment of the function of the retina.

Another effect of the increase of fluid within the hyaloid, and of the advance of the ciliary processes just described, is the displacement of a certain amount of blood contained in these organs, and in the ciliary muscle. This becomes a matter of necessity, as the sclerotica is not distensible to the ordinary forces that are applied to it from within. The exit of the blood in such circumstances is provided for by the anterior ciliary veins which emerge from the anterior part of the sclerotica, and are invariably observed to be greatly enlarged when intraocular tension is increased.

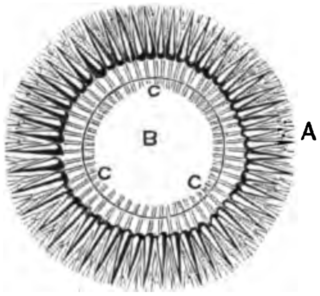
But the amount of vitreous fluid may also *decrease*, within certain limits, without disturbance of vision, and this also is explained by the elasticity of the ciliary processes. In this case the ciliary processes contract upon the diminished vitreous, falling back, and approaching with their apices the margin of the crystalline lens; and from the connection which the retina, choroid, and sclerotica have with the ciliary body, they are likewise acted upon in an equal degree. By this means the hyaloid membrane is kept tense, and to it are maintained the close adaptation of the ocular tunics. We have an illustration of this state in advanced age, in which all the fluids of the body, as well as those of the aqueous capsule, are diminished, and which is one of the causes which contribute to the production of presbyopia in the aged, the hypermetropia acquisita of Donders. In exaggerated degrees of atrophy of the vitreous, the ciliary processes fail to contract upon the contained fluid, and in such cases the hyaloid is shrivelled, and the retina, which should be spread out into an even sheet, is thrown into folds. The explanation of this pathological condition seems to be this; that the inflammatory action which produces the atrophy of the vitreous, destroys, at the same time, the motive power of the ciliary processes.

From what has been said under this head, the elastic expansion and contraction of the ciliary processes which follows the increase or diminution of the vitreous fluid, is to the vitreous body what the coils of elastic tissue of the bloodvessels are to the blood within the arterial system; it is the part on which the distending vitreous chiefly falls, and which accommodates the capacity of the hyaloid to variations in the amount of fluid which it may undergo.

(*d*) The ciliary processes and vitreous tissue antagonise the action of the ciliary muscle in the accommodation of the eye for near objects. From the position of the ciliary muscle, and from the origin and insertion of its fibres, it would appear that during its action in the accommodation of the eye for near objects, the ciliary processes must be advanced towards the junction of the cornea and sclerotica; and as the structure of the vitreous humor takes its origin from these organs by membranous segments, which become blended with the hyaloid in the equator of the globe, the form of the vitreous body will be also somewhat altered by the same means. Now, supposing this to be the case, the effect of the elastic force of the ciliary body and vitreous tissue will be to bring these parts back to their original position and form whenever the ciliary muscle has ceased to act. This force inherent in the ciliary circle and vitreous tissue would seem to antagonise the action of the ciliary muscle in the same way as the elastic tissue of the pulmonary vesicles antagonises the inspiratory muscles in respiration, and induces the condition of rest which follows the accommodative action of the eye.

But from the connection which the ciliary processes have with the crystalline lens, these organs appear to have an important effect in inducing that change of form of the latter which corrects distantial abberration. It is regarded as proved by most philosophers, that the anterior surface of the crystalline lens increases in convexity, and that the posterior surface undergoes little or no change of form, during the exercise of the eye on near objects. As the explanation of this change has been sought for in vain, it is hoped that the knowledge of the following structure may assist in clearing up the mystery. In the clear space between the ciliary processes (Fig. 7) and the rim of the lens, but in the substance of the vitreous, is a zone of strong fibres (c), each of which arises from the blunt ends of the ciliary processes, and are implanted into the posterior capsule near its border. These fibres lie behind the beautifully transparent ligament of the lens, from which they are scarcely distinguishable. Indeed they seem to have been so confounded by Otto Becker, who appears to have observed them in the living subject, but who took them for the foldings of the zonula Zinnii. For detecting these fibres in the dead subject, first the cornea, then the iris, and then the anterior capsule of the lens, may be removed to their extreme border, and the lens itself lifted wholly from its bed. The posterior hemisphere of the globe may then be divided transversely into an anterior and a posterior segment, the former being retained for examination. After removing the greater part of the vitreous from the anterior segment, the latter is to be placed on a glass slide and treated with dilute nitric acid. The parts left are, the ciliary processes, the zone of Zinn, the posterior capsule of the lens, and the fibres under investigation, the latter of which may be readily observed with an object-glass of moderate power. I have not observed any of the fibres passing between the ciliary processes and the anterior capsule of the lens; but their place would appear to be taken in the latter situation by the suspensory ligament, which is inserted into the anterior capsule a little way from its margin. Thus it may be said that there are two ligaments of the lens: one of the anterior and the other of the posterior capsule. Now, supposing, as before, that in the accommodation of the eye for near objects the ciliary processes are drawn forward by the ciliary muscle, the first effect upon the crystalline body will be a traction upon its entire border from behind forwards; but as the septum between the anterior and posterior hemispheres renders the immediate displacement of the aqueous humor impossible, the lens will not be moved forward by this force. In these circumstances the posterior capsule will only be more closely applied to the crystalline body, but the ligament of the anterior capsule will be slackened, while the anterior capsule itself will become more convex from its innate tendency to curl upon itself, moulding to the form which it takes the soft lenticular substance on which it rests. After the action of the ciliary muscle ceases, and on the ciliary processes falling back to their position of rest, a traction backwards will be brought to bear upon the anterior capsule, in consequence of which it will be rendered more tense, and the increased convexity (acquired by the preceding action) overcome, while the strain upon the thin and less elastic posterior capsule will be removed.

Fig. 7



A, Ciliary processes. B, Posterior capsule. C C C, Ligamentous fibres of the posterior capsule.

(*To be continued.*)

ON THE DIAGNOSTIC VALUE OF THE OPHTHALMOSCOPE IN "TUBERCULAR" MENINGITIS.

BY T. CLIFFORD ALLBUTT, M.A., M.D., Cantab.,
Physician to the Leeds Infirmary, etc.

In some forms of encephalic disorder—as in chorea, for instance—the ophthalmoscope gives us little or no help; in other forms—as, for example, in general paralysis or encephalic tumour—its discoveries have important pathological meanings; in other forms, again, the ophthalmoscope may give us most valuable help in diagnosis, and this is the case in some kinds of meningitis. During the last few years I have given a great deal of time and care to the investigation of the states of the eye in meningitis, and I hope to be able to show that my pains have not been thrown away. I wish now, however, to speak only of that form of meningitis which is called "tubercular," for it is upon this form that I have the most important statements to make.

I began to use the ophthalmoscope in meningitis as a help to the general study of that most important disease. I had long been convinced that tubercular meningitis, as a disease of children, is more common and less uniformly fatal than is generally supposed. In its milder forms, however, it is very difficult of diagnosis; and as before the discovery of the stethoscope the diseases called phthisis were supposed to be almost invariably fatal, because the cases which were so well marked as not to admit of doubt were fatal, while the nature of milder cases which admitted of recovery were open to question, so is it now with tubercular meningitis. Those cases which present no difficulty of diagnosis are the extreme forms which kill, while those which admit of recovery are not to be diagnosed with certainty. Can the ophthalmoscope help us to this difficulty, and may we hope to see it play in tubercular meningitis the part which is played by the stethoscope in tubercular pneumonia? The help we get from the stethoscope is this: A patient who has been languid for some months, who has lost weight, whose appetite and digestion have been uncertain, and who may have spit a little blood, or have coughed a little, comes for our opinion. We then examine the chest with the stethoscope. We may find nothing, not infrequently we do find nothing, and in such cases we cannot go beyond a guess in our diagnosis, although the subsequent course of events may prove that the lungs were actually diseased. Or, again, the stethescope may put us in possession of evidence which establishes the diagnosis, and enables us to ascertain that the lungs are diseased—a certainty which is not to be shaken by any subsequent course of events, even if they terminate in recovery.

Now I think I am in a position to say that we get some such help as this from the eye mirror in tubercular meningitis; that the mirror enables us to learn something more concerning the clinical history of meningitis than we know already, and that this additional knowledge will bring about some change in our views and opinions concerning the frequency and the curability of this formidable disease.

In my lectures lately published in the *Medical Times and Gazette*, I described the modes of origin of ischæmia papilarum, of optic neuritis, and of atrophy. I need not again go over this ground to show that in meningitis the exudation at the base of the brain may press upon, or the inflammation may involve, the cavernous sinus, and slacken the ebb of the blood, in which cases we have ischæmia only. Or the inflammation may creep down the nerve and cause neuritis optici, or may creep mainly along the sheath and cause perineuritis. Or, again, it may both interfere with the sinus, and so with the ophthalmic vein, and may likewise creep down the nerve; in such a case we should have ischæmia followed by neuritis. Finally, these states may be followed, and probably will be followed, by atrophy; but it is not probable that simple severance of the continuity of the nerves ever so occurs in meningitis as to cause a primary atrophy of the discs—an atrophy, that is, without forerunning congestion or inflammation. The anterior subarachnoid space is a district which, as we know, is especially one of the districts of tubercular meningitis, and the chiasma seldom escapes. In their backward course, from the chiasma up to the tubercula quadrigemina, we know also that the tracts are closely invested by the highly vascular pia mater, and that they are in great measure dependent upon it for their nutrition. Inflammation of the membranes upon the tracts, chiasma, or optic nerves, therefore, not only creeps up to the eye and presents its characteristic cell proliferation, but it also cuts off nutriment from the nervules. This compound mode of change I have several times verified with the microscope, and have seen the gross connective tissue of neuritis enclosing, not crushed nerve-filaments, but empty or half-empty spaces from which the filaments were withering or had withered away. This condition is best seen in some more chronic cases.

It is, I believe, the opinion of most if not all physicians, that tubercular meningitis is invariably fatal. I see, for instance, that Dr. Wilks, in his recent lectures on Diseases of the Nervous System, repeats and adopts this opinion. Many medical men, however, while upholding this belief, will nevertheless say, that in the course of their practice they have seen one or two cases much resembling tubercular meningitis which recovered. The mere fact of the recovery makes them doubt their own diagnosis, and makes them suppose that the case which, had it been fatal, would have been unhesitatingly called tubercular meningitis, cannot have been meningitis because recovery followed. Indeed, it is well known that the diagnosis of tubercular meningitis, even in well-marked cases, may often be very doubtful. Children not infrequently present symptoms much like those of meningitis, but which turn out to be mere functional disorders, or which prove to be significant of cerebral diseases of other forms. And as this is true of cases which present very decided symptoms, much more is it true of cases presenting indefinite symptoms. The fever, the headache, the scream, the vomiting, the perturbed sleep, the strabismus, and other decided symptoms, followed by death, point undoubtedly to tubercular meningitis, and to an extreme case. But does meningitis occur only in extreme forms? or may it occur in milder forms which end in recovery? In milder forms we might have occasional but not urgent vomiting, some pain in the head, but not violent pain, some startings in the sleep, or even slight passing convulsive attacks; but all these taken together may well be attributed to some disorder far less formidable than tubercular meningitis. Hence, as I have said, it appears that, at present, meningitis can only be diagnosed with certainty, or, indeed, with any great degree of probability, in its extreme forms, which extreme forms are of course largely fatal.

The important question for us now to decide is, whether we have any means of detecting with certainty the presence of meningitis in those slighter cases where we can now only guess at it, or can scarcely even guess; and in which cases we need not expect to find a large percentage of mortality. It is here, I think, that the ophthalmoscope comes to our assistance, and gives us the same kind of help in detecting incipient or slight degrees of tubercular meningitis that the stethoscope gives us in detecting those incipient or slight degrees of ulcerative change in the lungs, which without it are beyond certain diagnosis. When a patient is seized with vomiting, headache, convulsions, and other symptoms of much meningitis, and when at the same time, on examination with the ophthalmoscope, I find congestion of the optic disc and retinal vessels, which is nearly always the case, then I have no hesitation in saying that the patient is suffering from meningitis at the base of the brain, and the autopsy proves the diagnosis to be correct. Suppose, however, that a child is liable to occasional vomiting of a "purposeless" kind, and attended with but little nausea; suppose him to be liable to a evening fever, and to be rather restless, or sometimes very restless at nights; suppose, moreover, that he complains of pain in the head from time to time of a kind which drives him for a few hours only from his companions and his games, or perhaps for a day or two; suppose, again, that his temper changes, and from being a good child he becomes irritable or even positively mischievous, while at the same time his memory does not develop, and he is quite unable to fix his attention upon his school work; suppose, farther, that he suffers from spasmodic movements during his sleep, or even from full convulsions, and that the child nevertheless recovers from this state, and returns either to full health, or to health of body with more or less injured mental faculties,—should we call such a case meningitis? Now, I have had many such cases under my care, and I have records of several in which the ophthalmoscopic appearances were noted throughout, and in which I found those same signs in very well marked degrees, which I have also described as occurring in undoubted cases of meningitis, proved by autopsy. Is it not probable that in these cases we have also meningitis—a meningitis less severe than that which proves fatal, but meningitis nevertheless? The main difficulty I have to contend with in supporting my view of these cases is, that by the very nature of them I am shut out from any appeal to the post-mortem table. It may one day happen that some patient of mine, who has passed through these states of ill-health, may die from other causes, and give me the opportunity of verifying or disproving my hypothesis; as yet no such opportunity has presented itself.

I will relate one case, however, which fulfils these conditions to some extent—a case in which I diagnosed meningitis in a first attack, and the child recovered, but died from a subsequent attack.

Master O——, aged six years, was under the care of Mr. Mann, of Leeds, for obscure head symptoms, suggestive of meningitis. At the same time I was seeing another boy, Master R——, also under Mr. Mann's care, for similar symptoms. A few days afterwards I was requested to see Master O—— likewise, so that I followed the two cases together with Mr. Mann throughout their course. Both boys complained of fitful headache; intolerance of light; occasional purposeless vomiting, sometimes severe; both had much restlessness and starting, and both had slight occasional attacks of a more convulsive character. Now in both these boys I found with the mirror the condition I have described as ischæmia papillæ, and I accordingly diagnosed meningitis in both. Both the boys recovered in a few weeks, and I saw them both on several occasions subsequently in my own house, where I also made repeated examinations of the eyes. The ichæmia slowly subsided, leaving a whitish look about the discs, which threatened in Master R—— to become actual atrophy; but the danger subsided, and the sight remained good so long as I had him under my notice. His recovery continues, though his mother stated when I last saw him that he still suffered from some mental incapacity, and a little irritability of temper. In the case of Master O——, the ischæmia of the discs slowly subsided. He walked several times to my house with his mother, a distance of at least a mile, and he joined in the sports of his fellow-boys and girls. One day he came into the house complaining of his head, and the old symptoms of meningitis returned. I again saw him with Mr. Mann, and discovered optic neuritis. In this attack he died, and we obtained a post-mortem examination. We found meningitis, and the mischief was apparently of two dates. There was a layer of dense stringy lymph about the chiasma, matting it tightly down, and the membranes in the neighborhood were condensed, opaque, and adherent. Smeared all over these parts again were fresh soft layers of lymph; and there were marks of recent inflammation in the Sylvian fissure, and all along the base down to the medulla. The central parts were softened, and the ventricles full of fluid. I found descending neuritis in the optic nerves, and fatty degeneration in the tracts and tubercula quadrigemina. I can scarcely resist the conclusion that both these boys suffered from tubercular meningitis, limited in the first instance to a small part of the base of the brain, and that from this they both recovered under the treatment by cod-liver oil and iodide of iron, which we prescribed; but that the recovery of the boy O—— was only temporary, and was followed by relapse and death, the autopsy proving that the second attack, at least, was undoubtedly meningitis.

I could bring forward at least a dozen more cases, fully noted, in which I suspect that meningitis has existed or now exists in a chronic form, my suspicion being founded upon the symptoms and supported by the ophthalmic indications. To relate them, however, would not add anything of importance to that which I have already written, and would take up much time and space. I may state, however, that in examining the eyes of a number of idiots—not congenitally idiotic, but with idiocy due to disease—I have found that a certain proportion of them present those changes, or their results, in the optic discs which I commonly find after meningitis; while, as I have said, symptoms of mental deterioration or arrest formed a prominent feature in the after-history of several of the cases which I examined during the supposed acute stages. May not many of the idiots in our asylums be the victims of a long-past meningitis, which has left permanent injury behind it in the brain, but which has not destroyed life?

I have, however, to notice two objections which seem to withstand the hypothesis I have proposed. The first is, that until the ophthalmoscope has been used more extensively, and its indications checked by a much greater number of autopsies than at present, we cannot say with certainty what inferences may be drawn from the neuritic or ischæmic states of the discs. Neuritis must always mean structural disease,* perhaps, of greater or less extent, but states of ischæmia may hereafter be found to accompany states of disturbed cerebral circulation—of encephalic congestions, for example,—which might give rise also to the cerebral symptoms I have described, and again subside, leaving not a trace behind. This brings me to the second and very serious objection: That thickenings and adhesions of the meninges at the base of the brain are rarely recorded as old lesions in post-mortem descriptions. It may be that our attention has not been directed to this point, and that such changes may be found more frequently if looked for more carefully; or it may be, that the membranes clear up after a long interval of time; or, again, the new formations may in time shrink into filmy or thready extensions which scarcely attract notice. Pathologists have not yet looked carefully for evidences of old meningitis; but now that I have put the question distinctly forward, I hope we shall soon have that number of able observers at work which only can settle a point of so much difficulty.

---

* I must guard this statement. It seems certain that some cases of optic neuritis present themselves to the ophthalmic surgeon in which the neuritis is significant of no other change than its own. Such cases do not fall under the physician's care, but Mr. Hulke has informed me of one or two.

I have, however, the pleasure of quoting the following opinion of Dr. Crichton Browne, whose vast opportunities of observation at Wakefield, and whose ability and skill in the use of them, need not my poor testimony, but give great value to his statements. I may say that I made no mention whatever to Dr. Browne of my views on the matter, but simply put to him the three short questions which are given with his replies in full.

1. Whether you think idiocy is often to be traced to tubercular meningitis of past years?

"I have seen a few cases of idiocy which were distinctly referable to tubercular meningitis in early years, and a considerable number of cases in which I suspected a similar causation, but could obtain no satisfactory proof of it. When tubercular meningitis is so severe and well marked as to be *diagnosed*, it generally ends fatally. It is only when it is so limited, subacute, or masked as to escape recognition that it is likely to pass into permanent forms of mental derangement or impairment, and then its previous existence can only be inferred. I am quite persuaded in my own mind that partial and subacute attacks of tubercular meningitis in infancy and childhood are much more frequent than is ordinarily suspected, and are sometimes responsible for cerebral abnormalties which the anatomists are in the habit of attributing to synostosis *et hoc genus homne*. I am satisfied that they constitute the transition stage through which precocious children pass into dulness or imbecility of intellect. A little prodigy of wit and learning loses health and weight, complains of vague feelings of sickness, giddiness or drowsiness, and suffers from night terrors, paroxysms of rage or hallucinations. His stomach or bowels are said to be deranged. He emerges from this *trifling* illness bereft of his superior powers, stupid, ineducable, lethargic, or perhaps a partial idiot. Tubercular meningitis has been quietly and covertly at work undermining his brain and sapping his faculties, while no one dreamt of its presence. I have somewhere published a case of moral insanity (idiocy of the moral sense and hypertrophy of the animal propensities) which was distinctly traceable to an attack of tubercular meningitis: and I have met with many cases of perversion of character and liability to insanity which could be followed up to the same source. I have no hesitation, then, in classing tubercular meningitis as one of the causes of idiocy, although I would not certainly give it the highest, nor perhaps even a middle place, amongst these, supposing them to be arranged in their order of frequency. The causes of idiocy are very numerous and various, and I am not prepared as yet to marshal them in their proper order."

2. Whether any of the cases of idiocy which I (Dr. Allbutt) examined with the ophthalmoscope were likely to be such cases?

"Of the idiots whom you examined here, it seems to me highly probable that Talbot (No. 4) and Milner (No. 8) may have to date their idiocy from attacks of tubercular meningitis. I have no positive information on the subject, but shall make inquiries and report to you."*

3. Did you ever find traces of old meningitis at the base in cases of idiocy?

"My own experience in the morbid anatomy of idiocy is but limited, but I am aware that the appearances to which you refer—bands, adhesions, &c., as also thickening of the arachnoid, and miliary tubercles of the pia mater—have been found in autopsies on idiots. I examined the body of an idiotic boy in the Warwick Asylum some years ago, and found great thickening of the arachnoid, adhesions between the hemispheres and anterior and middle lobes (at fissure of Sylvius), with fibrous bands at the base, thickening of the velum interpositum, and remarkable enlargement of the pituitary body. These changes must surely have been due to meningitis, and to this I set them down at the time. I had no history, however, to verify my impression. In another idiotic lad, whom I also examined in the Warwick Asylum, and whose case I published in the *Edinburgh Medical Journal* for March, 1865, I noted firm adhesion of the dura mater to the skull, especially along the median line, and great thickening of it posteriorly, thickening of the arachnoid, pallor of the grey matter, and a glistening appearance and unnaturally firm consistence, entire absence of the septum lucidum, and congestion and redness of the floor of the fourth ventricle; weight of brain thirty-five ounces and a half."

These notes of Dr. Browne's, forwarded to me in his entire ignorance of the object of my inquiries, are very interesting and important. The medical officers of any asylum which receives idiots might make very useful observations on this subject.

The final question is,—How constant are the evidences of the ophthalmoscope in undoubted cases of tuberculous meningitis? My opportunities of examination in such cases are not frequent; and this question could be answered far better by physicians of such institutions as the Children's Hospital in Great Ormand-street. In addition to the cases which have occurred in my own practice, however, some of the medical men in this district have also been so kind as to place cases of tubercular meningitis at my disposal for examination. I find that ophthalmoscopic examinations seldom annoy the child, except during a paroxysm of headache; and they rather please the parents, who think we are looking into the brain. I have examined the eyes in about twenty-five cases of tubercular meningitis of undoubted characters, which were watched through their course, and ended in death. I do not include the indefinite number of cases which I have seen once or twice at the hospital or at the dispensary, and have not followed up. In every one of those twenty-five cases I found ophthalmic changes; and I generally found them on the first examination. The changes were, most commonly, marked degrees of hyperæmia of the retinal vessels, which become swollen, dark, and tortuous. These changes were often traced up to the full development of ischæmia, which appeared next in frequency. Optic neuritis I found in about twenty-five per cent., as it occurred distinctly in six cases. In five of the cases I was present at the autopsy, and found the usual mischief at the base of the brain, in the Sylvian fissures, around the ventricles, and so on. It is somewhat remarkable that I should not have met with any exception to the rule of concurrence of the eye-symptoms with the encephalic mischief; but my numbers are far too small for any dogmatism. On one occasion, when I was talking the matter over with Mr. Carter, he said that he had a case of tubercular meningitis then under his care at Stroud, in which no eye-symptoms were present. He promised to examine the child's eyes again and again till death, and to secure a post-mortem if possible. He was kind enough to do so, and to place the case at my disposal. There was no mischief at all about the anterior part of the base of the brain; but there was mischief, small in quantity and slight in degree, about the cerebellar pia mater, especially between its hemispheres. The optic nerve was not congested.

---

* Both these cases presented marked changes of the optic disc. See my report on the Eyes of Idiots, published in the last volume of the Transactions of the Medical and Chirurgical Society.

This remarkable exception tends to prove the rule we should anticipate—namely, that tubercular meningitis is only revealed to the mirror when it invades the anterior and inferior parts of the encephalon; and that the eye-symptoms, though the rule, are yet in reality accidental, and depend upon the locality of the mischief. In Mr. Hulke's cases, published in the sixth volume of the Ophthalmic Hospital Reports, part ii., I find four cases in which meningitis was known or supposed to coexist with optic symptoms. One of these patients recovered. In another case death followed; and in this optic neuritis was succeeding the "Stauungs" papilla, as in my case of Master O——, but had not, as in my case, reached the disc. Mr. Hulke points out that this Stauungs papilla, or ischæmia papillæ, is not therefore pathognomonic of intra-cranial tumor, as has been supposed by Graefe, but here occurred as a consequence of meningitis of the base. I pointed out the same thing in my lectures "On Optic Neuritis," published in the *Medical Times and Gazette.*

Leeds, April, 1869.

P. S.—Some of my readers have expected me to refer to tubercle in the choroid as symptomatic of tubercular meningitis, and Dr. Moxon has been so kind as to send me an account of such a case which recently occurred in Guy's Hospital. Several such cases have been shown of late at the societies also. Tubercle in the choroid is of little value as a diagnostic sign; it has only the corroborative value that tubercle in the lung would have; and, on the other hand, it is of far too rare occurrence to make its absence worth noting. As a pathological event, however, it is interesting and instructive.

REMARKS ON THE ANTISEPTIC TREATMENT OF WOUNDS.

By E. R. Bickersteth, F.R.C.S., Edin.,
Surgeon to the Liverpool Royal Infirmary.

LIGATURE OF THE CAROTID, ETC.

The editorial remarks regarding the antiseptic treatment of wounds contained in The Lancet, in which comment is made on the discrepancy of the results obtained by Mr. Lister and by other surgeons, induce me to notice briefly the result of my personal experience in this matter. And I do this with the more pleasure as it affords me the opportunity of recording the first cases in which the antiseptic catgut ligature has been successfully used on the human subject.

Before detailing these cases, I would remark that for several years I have used carbolic acid in various forms in the treatment of severe wounds, and have the utmost confidence in its power in preventing putrefaction and the inflammatory processes dependent on disorganisation. One case vividly impressed on my mind, and which I can never forget, occurred in the summer of 1867. A man was admitted into my wards, with his right hand terribly crushed and lacerated by being caught between the cog-wheels of machinery. Several of the metacarpal bones and the phalanges of all the fingers were more or less extensively fractured, and the soft parts were generally so much contused and detached that amputation appeared inevitable. The thumb, however, and its metacarpal bones were uninjured, and I should have proposed to preserve this much had it not been that the soft parts around were so lacerated that it seemed doubtful whether sufficient living structure could be obtained to form an efficient covering. In order to gain time for determining this point I resolved to wait, expecting that a line of demarcation would presently form, and indicate how much texture was irrecoverably destroyed. The hand was placed on a pillow covered with macintosh, and irritation with carbolic-acid lotion (one part to forty) was constantly maintained by means of bottles, with strips of lint hanging from their necks, suspended from the cradle placed over the limb. Day after day I carefully looked at the parts, but failed to find any indication of inflammatory action, either in the hand or in the arm above. There was not the slightest redness or swelling, or even constitutional irritation. Everything looked exactly as it did when first put on the pillow, and I even began to hope that, after all, the whole of the hand might be saved. At length, on the twelfth day, wishing to examine the progress and condition of the parts more minutely, I ventured to raise the limb, and then, to my disgust and astonishment, it was obvious enough that the whole hand was absolutely devoid of life. That such a state could have been maintained for twelve days without any visible signs of change in the injured part or in the limb above, and without any constitutional symptoms, was indeed wonderful; and that the absence of putrefaction and consequent inflammation was due to carbolic irrigation was abundantly shown by these phenomena rapidly supervening after irrigation was discontinued, and the parts wrapped in a poultice preparatory to amputation.

Aneurism of the carotid; Hunterian operation, with antiseptic catgut ligature, both ends being cut off; complete primary union within a week; cure. —William R——, aged thirty-two, was admitted into my wards on the 3rd April, suffering severely from aneurism of the right carotid. It had originated near the bifurcation twelve months before, but had not enlarged materially, or caused any serious inconvenience, till three weeks before admission, when a sudden increase took place, due probably to rupture of the sac. When admitted, the tumor was the size of a large orange; it overlapped the angle and base of the jaw, and extended downwards to within an inch and a half of the top of the sternum. Its lateral dimensions were equally extensive; and internally the tumor encroached on the pharynx so much that the unfortunate patient was almost unable to swallow or to speak. He was continually expectorating his saliva, and was in such pain and distress as to be unable to lie down or sleep. His pulse was constantly above 100, and his countenance indicative of great distress.

Aconite, digitalis, and opium were severally administered, and alike failed to afford any relief; and as it was evident that the man had not many days to live unless relieved, I determined to tie the common carotid without delay. Even this measure afforded but slight prospect of cure, for symptoms indicative of perverted action in the brain had already set in. On the day before admission, his sight, previously good in both eyes, had almost gone from the right one; the pupil was dilated and nearly insensible, and there was a slight divergent strabismus.

On the 6th of April I tied the common carotid, about an inch and a half above the sternum, with fine catgut, previously prepared with carbolic acid, according to the directions of Mr. Lister. The operation was more difficult and tedious than usual, owing to the limited space and to a peculiar arrangement of the bloodvessels. The aneurism-needle was, in the first instance, passed round an artery fully as large as, and exactly in the situation of, the carotid trunk; and I was about to encircle it with the ligature, when I observed that its compression in no way influenced the pulsation in the aneurismal tumor. A little further examination and dissection then revealed the true carotid, which lay exactly in the same plane as, and parallel to, but outside, the vessel before denuded. It was very much enlarged, being as big as the forefinger between the second and third joint. Around this the ligature was safely carried, tied tight, and both ends cut short off. During the operation care was taken that all sponges and everything used were washed with carbolic lotion (one part to forty of water). After all oozing of blood had ceased, the edges of the wound were brought together by several silver sutures, washed again with carbolic lotion, and neatly adjusted; and then a piece of lint, three folds in thickness, and large enough to overlap the line of incision at least two inches in every direction, thoroughly soaked in carbolic oil (one part in five of oil), was applied and carefully adjusted, so as to rest evenly on the irregular surface. Over this again a somewhat larger piece of lint, similarly prepared, was placed; and then upon this two thicknesses of gutta-percha tissue. Cotton wadding and a bandage completed the dressing.

It is unnecessary to give a daily report of the progress. It is sufficient to mention that each day the patient improved in condition and in comfort, and, after the fourth day, was able to swallow with comparative ease; the pulse gradually declined in frequency, and the expression became one of comfort and thankfulness.

The local treatment consisted in maintaining as far as practicable, absolute rest; but this was a matter of difficulty, for, owing to the encroachment of the tumor on the pharynx, the patient was harassed, as before the operation, with constant cough and desire to expectorate. Each day, the dressings, *except the under-fold of lint,* were carefully removed. This under-fold was well smeared over with the carbolic oil, and care taken to let a little of the oil get beneath its margins all round; and then fresh lint soaked in the oil was put upon it: gutta-percha, cotton-wool, and a bandage as before. Such was the daily routine. No serum, pus or discharge of any kind escaped. On the seventh day I ventured to remove the under-fold of carbolic lint, taking care to let a quantity of the carbolic oil run under it as I lifted it up. The entire line of incision appeared to have united by primary union; there was not one drop of discharge. In fact, it looked exactly as I had left it when first covered up. Under cover of the oil, I then removed all the sutures; and probably I might then have dispensed with any further dressing to the part, but I wished to be quite secure, and feared, if I did so, that the points of suture might inflame, and suppuration spread thence to the deeper parts of the recently healed wound. I therefore decided to reapply the carbolic dressing, as before, for a few days longer. Five days afterwards, I again removed the under-lint, and found every part so perfectly sound and firm that no further precaution was required. There was no swelling and no thickening of tissues; nothing, indeed, except a simple linear cicatrix, such as must have occurred had the incision merely extended through the skin.

The consolidation and absorption of the aneurismal tumor progressed most satisfactorily. At the end of three weeks the patient was allowed to leave his bed. The sight of the right eye greatly improved, although the squint remained. He left the hospital on the 13th of April, cured.

(To be continued.)

CLINICAL NOTES FROM LECTURES IN THE COURSE OF CLINICAL INSTRUCTION AT ST. MARY'S HOSPITAL.

By Haynes Walton, F.R.C.S.,
Surgeon to the Hospital.

I select for to-day's remarks, gentlemen, some cases of amputation that have been in my wards. They illustrate a theory usually inculcated in the rules laid down about amputations of the limbs; while at the same time they show a greater extension of recognised principles, and therefore, thus far, exhibit novelty. They will too, I hope, establish in your memory the value of a therapeutic measure which is seldom used, because very little is known about it. I have said so much at different times about these patients during my visits, that perhaps you anticipate much that is to come; but practical facts cannot be reiterated too often in the ears of students.

That there is scope for choice in the position at which an amputation should be done, apart from the after-condition of a patient as regards his use of a member, is verified in these well-known contingencies,—that in proportion to the size of the part at which the amputation is made, is the risk to life, and therefore the danger increases as the trunk is neared; also that pyæmia, the cause of nearly half the deaths in these operations, is more likely to occur when a large bone is cut through.

It is my desire to show how I have adhered to this doctrine of "selection," while I have departed from some of the ordinary details, especially that which requires the lines of incision to be carried through sound integuments; and to prove so far as the opportunities I have had may be taken as proofs, that advantageous results have been obtained by my practice.

The first patient of whom I shall speak had his foot ground off near to the ankle-joint, the astragalus and the os calcis being cut through. The integuments on both sides of the heel were bruised and cut, andthe posterior tibial artery probably divided close to the internal malleolus. Amputation at the ankle-joint would scarcely have been successful, because enough sufficiently healthy integument was not to be had. Amputation above the joint next offered itself in the routine of surgery. Looking at all the risks of this, and the peculiar risk of primary amputation in a robust adult, I hesitated, and ultimately determined to trim the stump, get what integuments I could, and to trust the result of healing partly to adhesion, and partly to granulation of the bone. You should be told that in the operation of amputation at the ankle-joint the healing is by granulation, and sloughing is always imminent; and that the worst results as regards sloughing occur after accidents like those before us, so that my patient was scarcely in a worse position than if his ankle had been amputated under the most favorable mechanical circumstances.

It was requisite to smooth the bones, and I applied the saw as far back as I could, without opening the ankle-joint, in order to have less surface to be covered. When the soft parts were adjusted, and plaster was used, there was a bit of astragalus not covered, and which was left to heal by granulation. I divided the tendo Achillis, and put the limb on a splint. You know how much value I attach to supporting a stump after amputation. Cutting through the cancellous texture of a bone is less dangerous as regards pyæmia, consecutive phlebitis, and suppuration, than when the medullary cavity is opened; and the remark applies in sawing through short bones. Light tepid poultices were applied. On the fourth day some sloughing spots appeared, and the leg was much swollen.

Now was introduced the treatment, of so much value, to which I have alluded—viz., irrigation. The thread syphons were at work night and day. Within twenty-four hours improvement was aprent. The leg was less swollen, the veins were less prominent, and the constitutional symptoms better. In fourteen days every part of the wound which was not adhered was covered with granulations. In nine weeks the man left the hospital, walking with a stick.

The next two cases were the subjects of much interest to all the students. They were remarkable for being admitted about the same time, the one two days after the other; for the exact similarity of the accidents, both occurring in young men of the same age, of the same size, and of the same occupation; and were remarkable, too, for equally good results.

While working at machinery, each of these men had his hand ground off at the wrist. One was admitted the day after the other. Two courses were open to me here—either to amputate through the forearm, or at the wrist, and to trim the torn and scanty integuments, and cover the denuded cartilages as well as I could, and to trust the result to healing of the soft parts by granulation, and covering of the cartilages by the same process.

In the first case, I disarticulated the carpal bones, and shaved off the projecting extremities of the radius and of the styloid process of the ulna. In the other, I removed the wrist, but left the radius and ulna intact. After a few days there was some evidence of sloughing in each case and irrigation was commenced. In a week the patients left their beds, and irrigation was done during the day, while they were seated in arm-chairs.

You know that the rapidity with which these cases progressed was a marvel to every one. After the granulations were thoroughly established, you remember how I strapped the parts and left off the irrigation. I pointed out to you the advantages which these men enjoyed in having the full length of their forearms, and excellent stumps, with good and healthy cicatrices. Both left the hospital just six weeks after admission.

The last patient to be introduced to your notice is now lying in the hospital. He jumped out of a railway carriage when insane, and his foot was ground off. Rather than cut through the bones of the leg, I preferred to amputate at the ankle-joint, although I could not get quite integuments enough to form flaps that could be placed in apposition at every point. It was evident, therefore, that some of the wound would have to heal by granulating over bone. On the first indication of a little unhealthiness about the stump, irrigation was applied. You know how well he is doing. He left his bed the fourteenth day, and during the daytime he is in a semi-sitting position in an arm-chair, the irrigation still going on.

The cicatrices which are inseparable from healing by granulations on an exposed surface are less healthy than integument, and are more prone to be destroyed by accident or disease. A cicatrix is but an imitative tissue of that which it supplies, and is inferior in every respect. This imperfection must be met by having the part carefully guarded. In dealing with torn and lacerated integument in the manner in which I have described, a case is not likely to pass through its several phases without some amount of sloughing, by which is separated that portion of integument which is too much damaged to live; and you must be prepared for this. Understand fully that I am not endeavoring to attach more value to this kind of practice than it is really worth; I am merely introducing to you a resource that is not generally made available. Its application has a limit; and your judgment and common-sense must decide, in any given case, whether you should resort to it, or amputate through the long bones of the limb. It is less likely to find favor in the eyes of young operators, because it is anything but a showy proceeding in an operating theatre. If amputations as generally done were devoid of risk, and always united by first intention, we should have all that could be desired. A quick-healing process is very uncertain, and there is more failure of it than success. I have over and over again, drawn your attention to the distressing condition of a patient when his stump sloughs and the extremities of the bones are exposed.

A few words about the irrigation. I do not pretend to know much about this, as I am yet a learner. I have not applied it in more than a dozen cases; but of its advantage, wherever any sloughing is going on, I am quite certain: it stops the process as by magic. Lives may be saved through it by the checking of pyæmia. Instead of the foul materials which are generated being allowed to accumulate, as they do in a poultice, and undergo decomposition, they are washed away as soon as they are formed. I have looked in vain among the surgical works within my reach for a description of irrigation in these cases. As a means for applying cold, the process has been in use for many years; and I believe it was more used formerly than now. My apparatus has consisted of a small reservoir, from which hung some worsted threads; and the water was thereby conveyed by drops to the diseased part, over which was laid a piece of linen, with the lower edge hanging free, so that there should be no impediment to the escape of the fluid and the foul materials. A gutta-percha sheet received the dripping, and conveyed it to a vessel on the floor. I have never employed carbolic acid or any other drug with the water.

Mr. Thomas, one of our students, has invented a nice apparatus for the purpose, which is effectual, secure, and easily managed. It is, too, cheap, costing only 16*s*. It is a metallic reservoir, capable of holding half a gallon of water; to which is attached a tap, with a transverse perforated cylinder. The dropping of the water is, therefore, easily regulated. That part of the contrivance with which I am most pleased is the stand on which the reservoir rests. This consists of two thin metallic curved bars, which cross the bed, and are attached to each side of the bed-frame by thumb-screws. By this arrangement the apparatus can be placed as high or low over the bed as desired; and the reservoir can be pushed from side to side, by sliding it on the bars. When warm water is used, the heat is kept up by a non-radiating material, with which the vessel is surrounded.

DIAGNOSIS OF HANGING.

By Andrew Allison, M.D.,

One of the Honorary Surgeons to the Lloyd Dispensary, Bridlington.

Questions of medical jurisprudence have not hitherto occupied a very prominent place in our periodical literature. The practical interest taken in medico-legal subjects is limited to a few experts, and the general practitioner is seldom employed in the higher branches of forensic medicine. Gentlemen who have been educated in Scotland often neglect to cultivate a competent knowledge of chemistry and physiology in their application to the detection of crime. Caledonian students affect to believe that their altitude in scientific attainments will warrant a degree of indifference to the less attractive branches of an encumbered education. Such persons, in after-life, generally exhibit a notable ignorance of the able teachings of the northern schools.

In Scotland, coronors' inquests are unknown: but in England they are of daily occurrence, and medical practitioners are liable to be summoned to give evidence as often as scientific difficulties are involved in such investigations. When the professional referee manifests any degree of ignorance or oscillation in his testimony, the jury invariably draw conclusions adverse to the professional reputation of the witness, and the facts which the inquiry ought to establish are sometimes obscured by his unsound deductions.

Before proceeding to comment upon the fallacy of marks upon the throat as a diagnostic sign of hanging, I shall take the liberty of reasoning somewhat analogically on to the question which I am desirous of ventilating. In morbid states of the nervous system, expressed by neuralgic pains, the tolerance of anodynes is proportioned to the pathological lesion. For example, in tic-doloureux, a large dose of opium may be administered without even giving rise to a sense of drowsiness; whereas, in the physiological state, this dose would in all probability produce decided symptoms of narcotism. Thus, by graduating the dose to the urgency of the disease, *the excess*, if any, is alone liable to detection. This fact serves to show the characteristic impressions produced in opposite states of the organism. By gauging the quantity of calomel capable of being converted into the bichloride of mercury in the stomach, the therapeutic properties of the alternative are obtained, and that only which is *in excess*, and disproportioned to the action of the gastric chlorides, can be detected as a subchloride in the intestines. In like manner, by regulating the amount of strychnine taken into the stomach for killing purposes only, all traces of the alkaloid disappear from the body at death; and that portion, if any, which remains unabsorbed can alone be detected by the analyst. In hanging or strangulation, provided the constricting force applied be moderate, and not continued beyond the extinction of life, no furrow of the cord is usually apparent upon the neck; for it must be remembered that the mark is a post-mortem production, and not invariably present as a diagnostic sign of hanging, unless the drop be considerable, or the suspension continued beyond the actual death of the individual. I was recently summoned to a woman who had suspended herself by means of a piece of sheep-netband, who was cut down by her husband before life was extinct. No mark of the ligature was ever visible, and had she died, and the cord been secreted, the cause of death might have remained a mystery for want of the alleged diagnostic mark upon the neck, and the attention of the coroner's jury probably directed to some unintelligible spasm of the heart as the supposed cause of the visitation. Had this woman been suspended for a longer time, the post-mortem mark would then, no doubt, have been visible. On another occasion, I was called to a man who hanged himself by means of a ploughstring. He was absent from his family only six minutes, and when he was cut down no print of the cord was afterwards found upon the neck. Indeed, in the case of this drunkard, had a homicidal act taken place by hanging, and the real cause of death been concealed, the alleged diagnostic cord mark could have thrown no light on the manner of his death. Some years ago, I saw a weighty farmer, who had been suspended for a few minutes. At the inquest no perceptible ecchymosis, or mark of the halter, was then observable. A person may be murdered by hanging or strangulation, and the absence of a mark only indicate that the ligature had been removed as soon as life became extinct, or before the post-mortem indentation had been developed. As in the cases of opium, calomel, and strychnine, already alluded to, the *excess* of those drugs only manifests their detectible presence in the system; so the *excess* of hanging, beyond that which causes death, alone gives rise to the characteristic secondary impression of the cord. The presence of a groove encircling the neck only proves that it was originated after death, and not that hanging was the primary cause of the calamity. A few years ago, mechanical force was applied to a gentleman's throat at Scarborough, which he survived for several days; and as the signs of the outrage were but slightly displayed externally, several medical gentlemen of the borough imagined the original cause of death to be apoplexy, forgetting that the living tissue will resist impressions which the post-mortem condition will readily yield to. The judge who tried the culprits in this case was of opinion that death was primarily caused by strangulation.

The conclusions which I draw from a full consideration of such transactions are—that death, in the case either of strangling or hanging, is so sudden, that the production of a mark of the cord, in any of its peculiar forms, takes place after death. Indeed, the track of the cord is a purely cadaveric phenomenon, and its value exceedingly questionable as a diagnostic proof either of suicidal or homicidal hanging. A body cut down as soon as life has become extinct will hardly exhibit any external signs of violence; whilst a dead subject, suspended for five minutes, will afterwards manifest mummification of the mark of the cord, the result of evaporation from the body, and must, therefore, be a post-mortem production. In diagnosing death from hanging or strangulation, where no marks are visible, the medical jurist must take into consideration the surrounding circumstances of the whole case, and then proceed to satisfy himself, pathologically, whether apoplexy, asphyxia, or neuro-paralysis, were conditions immediately concerned in arresting life. Under such an ordeal the medical inquisitor will be able to deduce conclusions satisfactory to a jury, and creditable to his own forensic sagacity.

Bridlington, May, 1869.

A CASE IN WHICH TWO LOOSE CARTILAGES WERE REMOVED BY SEPARATE OPERATIONS FROM THE LEFT KNEE-JOINT OF THE SAME INDIVIDUAL; RECOVERY, WITHOUT AN UNFAVORABLE SYMPTOM.

By Holmes Coote, F.R.C.S.,
Surgeon to St. Bartholomew's Hospital.

On the 20th of March I met by appointment, Mr. Worship, of Riverhead, to operate on a patient of his, who was suffering from the presence of a loose cartilage in the left knee-joint. As we proceeded to the residence of the patient, Mr. Worship inquired of me whether I had ever met with a case in which two coexisting loose cartilages had been observed in the articulation of the knee. I replied in the negative; although I knew no reason against the possibility of such an occurrence. I had seen numerous loose bodies in the hip-joint of an aged female, who had died after many years' suffering from rheumatic arthritis; and I have since found out that which I did not at the time remember—namely, that Morgagni had related the particulars of a case in which, after death, twenty-five of these bodies were found in the knee-joint of a woman who died of apoplexy. I noticed, however, that some doubt still remained in Mr. Worship's mind whether there were one or more than one in the knee of the patient in question.

On arriving at the house, I found the patient to be a tall, well-made young man of seventeen years of age. The usual symptoms were present, so that he feared to take any active exercise. The patient having been put on a couch, the loose cartilage was soon found near the inner condyle; but in a moment, owing to some slight movement of the limb, it disappeared. After a short manipulation, we found one on the outer side of the joint,—which we both, I believe, regarded as the same one first felt, having only shifted its position from one side to the other. I at once transfixed it with a long, sharp, and strong needle. The patient then, at his own desire, inhaled chloroform, and became insensible. I made a longitudinal incision down to the synovial membrane over the cartilage, and, raising the latter on the end of the needle, pushed it outwards. A very limited incision through the synovial membrane allowed me to push the cartilage out of the joint. The needle was then removed, and the wound at once closed by three metallic sutures, by strips of plaster, and by a thick layer of colodion. Mr. Worship put the limb on a back-iron splint, and suspended it to a cradle—such as is in common use at St. Bartholomew's Hospital. The limb was not disturbed for a week; and Mr. Worship informed me that in the seven days the wound was closed.

Soon after rising from his bed this gentleman discovered, to his great disappointment, that there was a second loose cartilage in the same knee. Indeed, there was every reason to believe that the cartilage first felt on the inside of the joint was the same as that which now remained, and produced the usual feeling of pain and discomfort.

I met Mr. Worship at Riverhead on April 13th, but we failed to find the cartilage after the most protracted examination. The patient ascribed the failure to the fact of his having kept his bed for the last three days, when, as he said, the cartilage got into some space whence it could not be shaken. On the 17th I again went down by appointment, when the cartilage was found, transfixed by the needle, and removed in precisely the same manner as the former. The after-treatment differed in no respect; no unfavorable symptom supervened, and the gentleman is now well.

The cartilage first extracted was thin and oval, and equalled in circumference the last joint of a man's thumb. That removed by the second operation was smaller than the other, concave on one side and convex on the other.

The case here related is in many respects worthy of consideration. In the first place, it offers some evidence to prove that loose cartilages within the joints have more than one manner of formation. I will just allude to the wild idea that they may be formed of a "solidified precipitate from the synovia." Such an hypothesis speaks for itself, and is its own condemnation. These bodies are for the most part formed in the synovial fringes, where they are nourished, and they grow until detached by accidental movements of the limb. They consist of fibro-cartilage and of earthy concretions, but not of true bone. Nor do they seem to me to increase in size after having been once fairly detached. On the contrary, I fancy I have observed that in the older cases they become shrunken, yellow, and opaque. The peduncle of attachment is soon obliterated. But the second fibro-cartilage seemed to me, from its shape and general appearance, to have been a portion of hypertrophied articular cartilage—as if it had been an outgrowth from the margin of the articular cartilage covering the extremity of the femur, and had by some accident been detached or chipped off.

Whatever may be the explanation, the case is worthy of notice in its practical bearing as to the possibility of there being two loose cartilages in the same joint—a fact impossible to determine, except upon the supposition that the patient or the surgeon may have had the luck to find them both within the grasp of his hand at the same moment.

Much has been written on the mode of removing these loose cartilages. The dangers attending a penetrating wound of a joint are well known; and of all joints, that of the knee, being the largest, gives us greatest cause of anxiety. Hence, we hear of valvular incisions, of subcutaneous sections, &c., that the risk of admitting air into the joint may be avoided.

The removal of the loose cartilage by a long subcutaneous incision, as practised by Mr. Square, has the advantages attending all subcutaneous operations; but it is not quite so easy of accomplishment, nor can it be so promptly performed as the operation by direct incision. The only troublesome consequence which I have known to supervene has been a low form of inflammation in the subcutaneous areolar tissue, followed by repeated attacks of ulceration of the skin.

The mode of operating which I adopted in this case, and have repeated in other instances, effects the removal of the loose cartilage without any interference with the interior of the joint; while the immediate closure of the wound puts the divided parts into that condition most favorable for recovery. Seven days sufficed for perfect union.

Among many surgeons the free employment of antiseptics, both during and after operations, finds much favor at the present day: and in this very operation now under consideration, Mr. Lister advocates the use of the carbolic-acid oil (one part in six). Contrary to the view thus entertained, I believe that in cases of blood-poisoning the septic material enters the system, not from the secretions of the wound, but by means of the infected atmosphere, and through the lungs. Hence, I reserve antiseptic agents for cases in which some manifest unpleasant odor has to be corrected. In a case related by Mr. Lister in the *Glasgow Medical Journal*, Nov. 1868, and treated upon the antiseptic method, the operation of removing a loose cartilage from the knee was performed on July 2d, and the patient pronounced well on the 12th—a period of ten days. In the case related by me, in each operation union was complete in a period of seven days.

Finally, I believe that when we have to deal with a case in which two loose cartilages are contained in one joint, it is better, unless both be in close contact, to remove them by separate operations, than to make two openings consecutively on opposite sides of the limb.

Margaret-street, Cavendish-square, May, 1869.

◆

NOTES ON THE DISEASES OF ANIMALS IN A STATE OF CONFINEMENT.

By S. M. Bradley, M.R.C.S.,
Lecturer on Comparative Anatomy at the Royal School of Medicine, Manchester.

So much light has been thrown upon human physiology by the study of comparative physiology and experiments *in corpore vili*, that we may reasonably expect that a proportionate increase of light will be thrown upon the knowledge of human pathology by the observation of the diseases which affect the lower animals. To be strictly accurate, it is perhaps the etiology of disease that is likely to be especially benefited by this study, as animal therapeutics at present are not in a highly satisfactory condition. My own observations have been limited to the animals that have suffered (and, I am able to add, as a rule have died) at the Bellevue Gardens. I have found that these animals, all in an artificial state of more or less close confinement, exhibit a remarkable tendency to develop certain diseases to which, so far as is known, they are not liable in a wild state, and which may consequently be regarded as the result of bad air and improper food. I propose very briefly alluding to some of those diseases, and for this purpose shall take the four great classes of vertebrata sequentially.

Fishes.—The most interesting disease that affects captive fish is the development of a fungus upon the gills. The fungus, which commences upon the free edge of the branchiæ, increases in size until it completely blocks up the internal between the contiguous gills, and the fish so affected dies as completely choked as if it were burked. When examined microscopically, the fungus presents the appearance of beaded cells, characteristic of low forms of vegetable life. The disease is contagious. Now all this appears to me, not a curious point of merely fanciful interests, but a fact of some importance to the practical physician; for "the opinion is gradually gaining ground that the malarious fevers of hot districts, yellow fever, dysentery, and cholera, are all caused by the action of different species of fungi and infusoria. In the late epidemic of fever in the Mauritius, fungi corresponding to those found in the Grand River were found in the intestinal canal." The most common causes of death, however, amongst confined fish, are want of oxygen and want of light.

REPTILIA.—Tubercular disease occupies the first rank in importance and frequency of the ailments to which the reptilia are liable; and, as Dr. Crisp (who had paid more attention to the subject than anyone else) has pointed out, the intestines, liver, spleen, and kidneys are more commonly affected than the lungs. The tubercular matter is generally very soft.

Reptiles in confinement are also liable to a peculiar form of stomatitis. The parts about the mouth swell; there is a viscid discharge; the mucus membrane of the mouth and adjacent parts becomes ulcerated; it is eminently contagious, and, as a rule, fatal: altogether strongly reminding one of glanders in the horse. Although this disease may be occasionally tuberculous, I believe—and I base my belief on its evidently contagious character and occasional curability—that it is by no means invariably so.

BIRDS.—One of the most striking diseases to which confined birds are liable is a rheumatic inflammation of the joints; the phalangeal articulations being the favorite sites of attack. Wading birds are more prone to this affection than any others, and this may probably be accounted for by the small amount of blood which circulates through their slender shanks, and the small power they consequently possess of resisting cold. The disease generally commences in winter, the joints, if not very much injured, frequently recovering themselves in summer. The affected joints swell; the limb becomes distorted; and if the disease goes on to any extent, the foot at last reminds one of nothing so forcibly as the hand of an old washerwoman badly affected with rheumatic arthritis. In a bad case, the phalanges at length rot off one by one, and the bird has at last to "stump it" on its tarso-metatarsal bone. Some birds—and this applies especially to ducks and hens—are subject (as the result of close confinment and overfeeding) to fits of apoplexy, technically called "megrims." After death the brain is found gorged with blood, and occasionally there is cerebral hæmorrhage.

Taking birds *en masse*, it may be stated that pheasants and moor-fowl bear confinement the worst; the raptorial birds (particularly the falconidæ) the best.

MAMMALIA.—It becomes necessary now to specify the diseases of some of the different orders, instead of taking them altogether.

Ruminantia.—The diseases of ruminants have become of national importance, and have been so thoroughly investigated that it is not necessary for me to dwell upon them. Their liability to lung affections, epidemics of pleuro-pneumonia, &c., is remarkable. Sheep are very liable to the presence of acephalocysts in various organs; though it is certainly not at all clear that this tendency to hydatid formation is the result of confinement. In the College of Surgeons there are nine specimens of hydatids in the sheep, situated in the lungs, brain, bones, liver, mesentery, and kidney. It is the presence of the Cysticercus tenuicollis in the brain that makes sheep "giddy"—giddy it may well be with such "a bee in its bonnet."

Of the diseases of pachyderms I need say little, as their great representative, the horse, has met with ample justice at the hands of Youatt and Stonehenge. The hog is very liable to the mumps and the mange, and is more frequently the subject of tubercule than any other pachydern. A female Asiatic elephant that I dissected last year at Bellevue, died apparently from cystitis.

Rodentia.—Rabbits, when kept in ill-ventilated hutches, are subject to a contagious and very fatal disease called the "sniffles." Its name is sufficiently characteristic of the disease.

Marsupialia.—Kangaroos and opossums are, like all phytophagous animals, very subject to tubercular affections.

Carnivora.—One of the most notable things to observe, in referring to this order, is their small liability to tubercular affections, as contrasted with vegetable feeders. They die from inflammatory diseases of the lungs and abdominal organs often enough, but comparatively rarely from tubercle. This remark, however, does not apply to the carnivora kept in menageries; here the intensely bad hygiene, the filthy air, and the constant exposure to wet and frequent changes of temperature, are sufficient to destroy the soundest constitution; and the carnivora so confined are very frequently the subjects of tubercle. The carnivora are also very liable to rickets and liver affections. Of six seals that have died at Bellevue within the last year, I found abscesses of the liver in five cases. This may possibly be partially accounted for by the too frequent and unnatural feeding they undergo in a state of confinement.

Quadrumana.—Everyone knows that monkeys are exceedingly prone to tubercular affections. This fact seems to me not merely attributable to climatic influences (powerful though they undoubtedly be), for caged monkeys die almost as freely in hot climates as in cold; nor is it the result of rebreathing a polluted atmosphere, or an unsuitable diet, for in many gardens—notably those at Amsterdam, the Jardin des Plantes, and Regent's Park—everything wise is done in the way of food and ventilation. I cannot but think that the immoral habits of monkeys are in a great measure the cause of their great mortality. Lemurs are very subject to cataract, sometimes affecting one eye, more commonly destroying both. Monkeys are also liable to venereal affections. I have several times seen them suffering from gonorrhœa, and in one or two cases have seen what I believe to be a genuine chancre. I hope ere long to again find a victim afflicted with an ulcer of this description. In such case I shall not fail to inoculate him, and so, perhaps, be enabled to finally determine whether the disease may be produced *de novo* by dirty communication.

Manchester, May, 1868.

ON DRUG ACTION.

By Edwin Payne, M.D.

When, as in the present time, the questions arise, Shall we give any medicine or not? Has the medicine done any good? the matter with reference to the effects of medicines cannot be regarded as unimportant. Some medicines appear to have an elective power for influencing certain parts of the organism in preference to others: thus arsenic exerts its influence upon the skin and the mucus membrane; iodine influences gland structure. May we not attempt to reduce our empirical knowledge of drug influence to some kind of law, instead of leaving it in such subjection to the law of disorder? I am quite sure that men who think, and who speak honestly what they think, have been frequently much disappointed when, after diagnosing their case, they proceeded to treatment. A desire for some kind of law, for something a little nearer to certainty, has been the thought if not the expression. The following remarks are advanced with the idea, not that such is the one law regulating the action of medicines, but that sometimes such a theory might be of use in regulating the administration of some remedies, and that by placing points in various ways, it occurs that the thoughts of other readers are started again, either to traverse old paths with new vigor, or are found to strike of in a new direction, at last leading up to the truth. With these few prefatory remarks I offer the following.

The healthy or unhealthy condition of capillaries which ultimately form our organism, is that wherein consists, in a measure, health or disease. When the capillaries of any part are wearied, they begin to dilate; the structure then gradually becomes congested, and it ceases, in a degree at least, to perform its function. Now these capillaries, differing in degrees of fineness, have a healthy condition which we may term "contraction," and in unhealthy conditions their state is "dilatation." Suppose, for the sake of illustration, that the healthy contraction is represented by a space of an eighth of an inch between two parallel lines: then the first unhealthy departure, that of irritation, may be represented by a dilatation of that space to two eighths of an inch; the second unhealthy stage, that of conjestion, by a further dilatation to three-eighths of an inch; and then the third stage, that of inflammation, by a further dilatation to four-eighths of an inch. This is the stage where exudation and breaking down of structure may occur, or else from which, as also from either of the preceding stages, the capillary returns to its healthy condition of contraction. This return is what the proper dose short of aggravation can effect. The remedy which has what may be termed "elective power" for the capillary structure affected is capable of accomplishing this return, by inducing healthy tone or contraction; but if over-doses of that same remedy be administered, then by over-contraction being induced, tone is depressed and weakness ensues, and the various stages of dilatation up to the destruction of tissue will follow in proportion to the amount of the over-dose. What exercise is to the body generally, contraction is to a capillary. What over-exercise is to the body generally—that is exhaustion and weakness,—that over-contraction is to a capillary — that is, dilatation, loss of tone, weakness. Thus quinine can tone capillaries; it can contract them. If this contracting power is pushed too far — if two much quinine is given,— it becomes a dilator of these capillaries, and then ensue headache and pain and noise in the head from over-fulness of these vessels so induced. Arsenic, again, can tone, contract the vessels of the skin and mucus membrane; but if given in too full doses, or continued beyond the contracting point, then a state of dilatation follows, and conjestion &c., may ensue; the eyelids begin to look red, and feel irritable. Iodine and mercury will be found to produce somewhat similar results,— *too much* producing conjestion, and *exudation* following to relieve the conjested vessels, or inflammation ending in destruction or ulceration of parts.

That an agent produces an effect upon a part — we may say congests it — should not lead us to say it is not a safe remedy, but rather that such condition following its use shows that it has a power to influence the capillaries in such a part; and that we have administered it in two large a quantity, or continued it for too long a time. We may resume its use after a time, but in smaller quantity. May we conclude from observation that a drug which will dilate a capillary has the power of contracting that capillary if given in a smaller quantity? May we conclude from observation that if we find evidence of a conjested, a dilated condition of capillaries as the effect of disease or loss of power, we can by the proper *contracting* dose of a remedy, having elective power for that portion of the organism, restore those capillaries to their healthy degree of contraction?

Another point of interest is that with reference to medicines said to be *cumulative*. Perhaps we might attempt an explanation thus: — These medicines remain in the system, and then all at once evidence their action. Let us take mercury as an instance. A patient takes mercury, and he gets little or no effect from it. After some days it is discontinued but then, within a few hours, he is found to be under its influence. Now was the dose of mercury here so excessive that it caused overcontraction of the capillaries, and therefore the sequence — their dilatation? This subsiding, the mercury was found to evidence its action all at once; because the capillaries, becoming uncongested, could then answer to its influence.

These appear to me to be points of interest in the study of *drug* action, and, if truly answered in the affirmative, might aid us in acquiring a greater degree of beneficial certainty in the administration of remedies.

Tavistock-crescent, Westbourne-park, May, 1869.

THE PRESENCE OF MUSCULAR FIBRE IN ERECTILE TUMORS.

By Campbell De Morgan, F.R.S.,
Surgeon to the Middlesex Hospital.

The last number of the Guy's Hospital Reports contains an account by Mr. Poland of an erectile tumor of the foot, with a very full and interesting description of the microscopic structure by Mr. Howse. Amongst the elements which composed the tumor was found striated muscular fibre; and Mr. Howse believes this to be "the only recorded case of its occurrence in an erectile growth on the limbs."

The cases of erectile tumor originating in muscle are not of frequent occurrence, although extension from cutaneous or subcutaneous growths into the muscular tissue is not uncommon. In the latter case muscular fibre is never, I believe, found as a constituent element of the tumor; but in the vascular growths originating in muscle it is often present. It may seem bold to make such a statement, considering that so few of these tumors have been described, but in three out of that small number striped muscular fibre was detected by my colleague Mr. Hulke, who was the first to point out the presence of this tissue in vascular growths. These cases, with Mr. Hulke's reports on the structure of the tumors, were published in the *Medico-Chirurgical Review* for January, 1864. In one case, removed by me, the tumor was seated in the rectus muscle of the thigh, in a woman. In another it occupied the upper part of the gastrocnemius, in a young girl. In the third, removed by Mr. Shaw, also from a girl, it lay on the edge, and extended some way into the interior, of the latissimus dorsi and seratus magnus, and the intercostal muscle between the sixth and seventh ribs.

It is remarkable, as showing the infrequency of these tumors, that the first on record was one described by Mr. Liston, in the twenty-sixth volume of the Medico-Chirurgical Transactions. In 1864, except the three specimens in the Middlesex Hospital museum, the only preparation I could find was in the museum of St. Bartholomew's Hospital. I do not know whether Mr. Liston's specimen was preserved; but there was not one in the museum of the Royal College of Surgeons. Demarquay, who says that these tumors are not rare, could only collect six cases. Some of these growths are not distinct tumors, separated by an areolar sheath from the muscular substance in which they are embedded, but are incorporated with the muscle as though they originated in its vascular tissue. In such structures one might expect that the muscular element would be present, though I do not know that it has been detected. Others of these growths are, however, separated from the fibres of the muscle in which they are embedded by an areolar sheath. This was the case in two, certainly, and perhaps originally in the third, of the specimens examined by Mr. Hulke, and found to contain striped fibre.

It is yet to be determined whether these fibres belonged to the muscle in the first instance, and were cut off from it in the advance of the tumor, or whether, as has been suggested by Mr. Howse, they were developed in the tumor in obedience to the law under which morbid growths so frequently assume the arrangement and structure of the organs near or in which they lie. In the cases examined by Mr. Hulke, the fibres resembled those of the surrounding muscle in size and fibrillation, but were pale, somewhat granular, and evidently undergoing degeneration. In Mr. Poland's case the fibres were of variable size, and some were bified—an arrangement not found in the muscles of the limbs; and its existence, perhaps, justifies Mr. Howse in the view he has taken.

It is not in all cases of vascular growth connected with muscle that striped muscular fibres are found. Perhaps it would be more correct to say that they are not to be found in all parts of such growths. I recently operated on a very large nævus which had grown from the time of birth on the back of a child a year and a half old. It measured about three inches across by two inches from above downwards. It was fixed, and the skin was freely movable over it. It became very full and tense when the child cried or struggled. I tried to remove it by dissection, finding that the parts first exposed could be separated readily from the muscles, the latissimus dorsi and rhomboids, under which it lay, and which had to be divided. But on getting to the deep part, it was found so intimately blended with the intercostal muscles that it could not be separated from them without opening large venous sinuses, which bled profusely. I had therefore to content myself with transfixing and tying firmly in four sections. The mass thus ligatured was cut away. The child made a good recovery. Mr. Hulke was again good enough to examine the structure carefully, but could not detect any trace of muscular fibre. There can be little doubt, notwithstanding, that this was a true case of vascular tumor originating in muscle, as all the parts of it which were not immediately connected with muscle were separated from the surrounding tissues by a sheath of connective tissue.

Upper Seymour-street, May, 1869.

MORBUS SATURNINUS (LEAD-POISONING.)

By William Frank-Smith, M.D., Lond., F.C.S.,

Lecturer on Medicine at the Sheffield School of Medicine, Physician to the Sheffield General Infirmary, late Physician to the Sheffield Public Hospital and Dispensary.

Seeing in my hospital and dispensary practice a very large number of cases of lead-poisoning among the file-cutters of Sheffield, I have been able to notice one or two points worthy of remark:—(*a*) As to the mode in which the lead enters the system. (*b*) As to certain rarer symptoms of the disease. (*c*) As to the elimination of the *materies morbi*.

(*a*) *As to the mode of ingress.*—As is well known, in the file trade a small leaden anvil or bed, on which the file is held while being cut, is the source of the poison. I have reason to believe that it is almost entirely through the skin of the hands that the lead penetrates. The file-cutters generally wear the nails long, especially the thumb-nail of the left hand, which holds the chisel and is in constant contact with the lead. Behind these appendages a large quantity of black dirt accumulates. I collected some of this from several men, and had no difficulty in chemically detecting lead. Again: having heard of the use of sulphuretted baths, I employed a solution of potassium sulphide, applide with lint and gutta-percha like a water-dressing. In several cases the skin of the hand became dyed with the lead sulphide. In several cases, also, in which this local treatment had been continued many weeks, it was very curious to observe that, while the *old nail was dyed black or deep brown, the new nail near the matrix had its natural white color.*

(*b*) *As to certain symptoms.*—(1) Lead kidney: I have short notes of two cases in which a fugitive albuminuria was detected. In these cases palsy was the prevailing symptom. They were chronic cases, with evidences of an unusually high degree of plumbic saturation.—(2) Neuralgia: I have notes of ten cases of plumbic neuralgia. Of these, in seven the pain was confined to the left thumb and hand; in two the crural nerve and the patellar plexus were affected very severely; in one the pain was over the frontal nerve.

(c) *As to elimination.*—When I commenced practice in Sheffield, I employed the iodide of potassium as an eliminative, and while employing it made a somewhat remarkable observation, which has been since confirmed by Dr. Hilton Fagge. A man came under my care with severe lead-palsy. On examining his mouth I was surprised to find the lead line absent: there was no trace of it, though I looked carefully with a good lens. I pointed this out to the then house-surgeon, Mr. Cooper, and to one of my colleagues. The patient was placed under the iodide treatment—doses, ten grains three times a day. In the course of a week or two I was very much surprised to see little arches of black puncta over the roots of the teeth, and in the course of a few more days the blue line was well marked, disappearing again before he left the hospital, about six weeks after his admission.

Dr. J. C. Hall has mentioned this case in his paper in the "St. George's Hospital Reports." Dr. Hall, who has had very extensive experience in these cases, employs a mixture containing sulphuric acid and sulphate of magnesia; and after careful comparison of the results of the sulphuric and iodide treatment, I have now no doubt as to the superiority of the former.

The mixture which I employ, and which acts with remarkable celerity and certainty, is as follows:—Sulphate of quinine, sulphate of iron, of each one grain; strychnia, thirty-sixth of a grain; dilute sulphuric acid, five minims; sulphate of magnesia, one drachm; water, one ounce: three times a day.

Sheffield, May, 1869.

ON A CASE OF COMPOUND COMMINUTED FRACTURE OF BOTH LEGS.

By William S. J. H. Munro, M.D., M.R.C.S.

James B——, aged seventeen, whilst at work in the Writhlington Coal Company's pits on the 14th of March, 1867, got both his legs broken by a block of coal falling on them, about midway between the knee and ankle-joints; the lower portion of each leg being completely doubled backwards; the tibia and fibula in each projecting through the wounds; small pieces of bone lying on their surfaces, whilst a piece of about an inch and a half was separated (and fell on the ground when removing the clothes) from the left tibia.

On being taken home, he was immediately placed on the floor, and both legs brought to their normal shape and length, when the whole of the sound surface was enveloped in resin plaster on moleskin, and a full-length, soft, leather-lined splint was applied to the sound aspect of each leg,—the injured one in each case being supported with two short splints of similar construction, and applied so as to leave between their nearest extremities as much space as would be necessary for dressing the sores. Strips of resin plaster were now applied over the splints, from the knee to the toes of each leg, firmly keeping the splints in their position, and the feet at the same time from swelling; and afterwards removing the portions of plaster between the ends of the short splints on each leg over the situations of the sores. In this way he was put to bed: the left leg laid in Liston's iron splint, and the sores on each leg dressed with strong turpentine liniment.

April 11th.—All has gone on well since the accident; the sore on the left leg healing rapidly, that on the right has healed so far as to admit the splints and plasters being removed from it, and to be put up in a strong starch bandage.

30th.—The sore on the left leg has healed; have taken off the splints and plaster, and put it as the other, which is now so well that the patient can raise it with its own power.

May 9th.—As the left leg seems a trifle shorter than the other, he is ordered out of bed, and to go about carefully on crutches, putting his weight on the right leg, but merely hanging the left suspended from his neck.

30th.—Took the starch bandages off the right leg, which is now quite well and strong; but the left leg, though equally strong, and now as long as the other, presents the appearance as if some small pieces of bone must come away. Ordered poultices to be applied.

Dec. 26th, 1868.—Seven or eight small fragments of bone have come away (since our last report) from the left leg; but none since July last, since which time he has been constantly at work. He is now quite well, and has no shortening, deformity, or pain in either leg.

Radstock May, 1869.

SUBCUTANEOUS INJECTION OF MORPHIA AND ACONITE IN CONVULSIONS AFTER LABOUR.

By R. M. Bowstead, M.D.

Amongst the anomalies requiring prompt aid, none require the help of the accoucheur more than puerperal convulsions. In country practice they rarely occur; yet they are always attended with an amount of danger, on account of the fear of effusion on the brain, or as a precursory sign of puerperal fever or peritonitis following. About two years ago I had two cases, which did so well, and recovered in so short a time, that I think it will be interesting to publish the facts, so that others may have an opportunity of trying my plan of treatment; and, if successful, I shall be glad to hear from any one who may have been equally fortunate.

A. C——, aged nineteen, was delivered of a full-grown child at 10 o'clock on the morning of the 10th of April. Her labour was rather tedious, but natural, and I left her very comfortable. At 7 P. M. I was sent for, and found her in a fit of convulsions, held down by four assistants. I applied cold to the head, and gave her full doses of antimony. At 10 P.M. the convulsions still continued. I administered a turpentine enema. At 1 A.M. convulsions as bad as ever. I applied a mustard poultice to the neck, and hot water bottles to the feet. At 3 A.M. the convulsions had ceased; but the patient was delirious and wanted to destroy her child. In about an hour the convulsions returned, and at 7 A.M. I found her as bad as ever. I gave her a small dose of morphia to procure a little sleep if possible, but to no purpose. All the day her convulsions continued. I had the head shaved, and ice applied. She could take no support. At 7 P.M. I found her sinking; her efforts to get away from those who held her had exhausted her. I therefore injected in the arm two minims of aconite (Fleming's) and one-third of a grain of acetate of morphia. In less than five minutes all the convulsions had ceased, and she was quietly sleeping. She slept for eight hours, during which time she perspired most freely, and on awaking asked for food. The rest of the treatment consisted of good support, and in three days she was convalescent.

About a month ago she was delivered of another child, and has done well.

J. H——, aged twenty, was delivered at 5 A.M. of a well developed child. The labour was natural. At 10 A.M. I was sent for to see her. I found her held down to the bed, she struggling fearfully, and attempting to tear her bandage off. She was much exhausted by her struggles, and foamed a great deal at the mouth. I could not get her to swallow anything, and at once injected into the arm the aconite and morphia. In a minute all the convulsions had ceased, and her arms fell down to her side. She slept quietly for seven hours. When she awoke I ordered her beef-tea, with a little brandy if faint. She had no return of convulsions, and when I saw her on the second day she was convalescent.

High Wycombe, May, 1869.

RARE CAUSE OF DEATH IN SO-CALLED EPILEPSY.

By G. Mackenzie Bacon, M.D.

A man was admitted as an "epileptic," and after a series of fits, increasing gradually in severity, died suddenly. To certify such a death as due to "epilepsy" is to entirely mistake the nature of the case, as the post-mortem showed, yet we cannot doubt that many cases are disposed of in this summary way, much to the detriment of any scientific investigation of epilepsy.

I subjoin an outline of the case, only remarking that I ventured the diagnosis of tumor. A man, aged fifty, an itinerant blacksmith, was admitted, under my care, in the Asylum on the 17th of October, with the history of a blow on the head, and an illness of only five days. The certifying surgeon described him as "a melancholic, having a tendency to suicide," but when admitted he was in a state of restless delirium, and had, during the first few days, attacks of slight unconsciousness, with syncope. He was stoutish and aged. After a few days he had a succession of convulsions, like ordinary epileptic fits, and got rapidly into a comatose state, from which there seemed little chance of recovery; but five days later he rallied somewhat, and took nourishment, though he had numerous "fits," which chiefly affected the left side of the face.

Nov. 1st.—He was partly hemiplegic on the left side of the body and face, but conscious, and the fits did not recur so frequently. He was much weaker, and had a bed-sore forming. The patient remained much in the same state till Nov. 9th, when he died suddenly, a few minutes after the night-watch had left him.

Post-mortem examination.—There was no sign of injury to the skull or brain. There was a largish collection of serum in the ventricles, and on slicing the hemispheres, so as to expose the central parts, a most remarkable difference was manifest between the corpus striatum and optic thalamus on the right and left sides,—the right being very much the larger, and so filling up the ventricle as to leave very little of a cavity. This enlargement was not due to any adventitious growth, but to a swollen condition of the parts. Dr. Gedge, the demonstrator of minute anatomy in the University, examined the brain for me by the microscope, and found no fresh elements nor signs of atrophy on the opposite side.

County Asylum, Cambridge, 1869.

CASE OF PARTIAL PLACENTA PRÆVIA AND SHOULDER PRESENTATION.

By Dr. W. J. Kennedy.

On Sunday, 13th December, 1868, at 10 o'clock A.M., I was hastily summoned to visit Mrs. H——, a farmer's wife, residing about four miles from my residence. On my arrival, I found her quite unconscious, pale, and almost pulseless. After she was restored to consciousness, the woman in attendance informed me that on the day previous she was seized with labour pains, each pain being followed by a gush of blood, which continued worse up till my arrival; the hæmorrhage being so profuse that the bed was wet through. I endeavored to ascertain the presentation by digital examination, but could not reach the os. I then introduced my whole hand into the vagina, when I at once felt a portion of the placenta overlying the anterior lip of the os. The os being largely dilated, I introduced my two forefingers through it, and with slight force separated the placenta from the cervix to the extent of about two inches, when the hæmorrhage almost ceased. I obtained some cotton wool, with which I made a plug, and introduced into the vagina. In a short time I was happy to see my patient very greatly improved, her color and pulse being very natural, and she was able to answer any questions put to her. After waiting for about an hour, she said she felt a very strong bearing-down pain. I removed the plug, which showed little or no hæmorrhage had taken place, and introduced my hand into the vagina as before. I found the membranes protruding through the os, and fancied I felt the shoulder presenting. I proceeded to rupture the membranes, when I found the right shoulder was presenting. As the os uteri was still well dilated and flexible, I introduced my hand through it, and laid hold of the left leg of the child, which came down quite easily. I then seized the right leg, and brought both outside the vagina. I administered one drachm of powdered ergot, which had the effect of producing strong pains, and in a short time my patient was delivered of a fine healthy child. The placenta came away quite easily.

Both mother and child are doing well.

Sanquhar, January, 1869.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.
> —MORGAGNI *De Sed. et Caus. Morb.*, lib., iv. Proœmium.

ST. MARY'S HOSPITAL.

A CASE OF HYDATID CYST OF THE LIVER; SUPPURATION; EVACUATION OF PUS AND HYDATIDS; EXHAUSTION; DEATH.

(Under the care of Dr. SIEVEKING.)

We were present at the autopsy of this case, which seemed of sufficient interest to deserve recording; and Mr. J. R. Walker has been good enough to give us some notes, which are appended.

Arthur D——, aged seventeen, admitted February 12th, 1869, suffering from pleurisy with effusion. On admission, the following history was obtained:—Family pretty healthy. The patient has hitherto enjoyed good health. In November last he felt a pain in the right side and stomach, which lasted about three days. About a month ago he felt a pain again in his right side, which he compared to a lump being there. This pain was worse when he lay down. He soon experienced difficulty in breathing in going up stairs, and was obliged to leave off work.

On examination, the right side appeared the larger, but on measurement no difference was detected; the circumference just below the nipples was 30½ inches. Breathing good over left front, also over the upper half of right side, below which there is absolute silence and dulness. Both sides seem to move equally in respiration. Resonance over left front less than over right front; vocal resonance much better over left than right. Heart-sounds normal. When he lies on his face the right posterior lower half is not nearly so resonant as the corresponding part on the left; still it is not so dull as on the front. Pulse 102, of medium force. Tongue moist and coated. Urine dark-colored, not acid; specific gravity 1030; and contains a large deposit of phosphates, but no albumen. Ordered iodide of potash, five grains, and bicarbonate of potash, five grains, three times a day; broth, beef-tea, and milk.

Feb. 13th.—Absolute dulness below fifth rib on right side.

19th.—Liver pushed down below hypochondrium; circumference around nipples 30½ inches; sides still symmetrical; respiratory murmur to be heard much lower down than at first; vibration has returned to right side; has been sick. Grey powder, five grains, each night.

22nd.—Complains of pain in the back; no pain on right side.

23rd.—Circumference around nipples 31½ ins., the right side being 16½ ins.; heart-sounds normal; pulse 96, soft and quiet.

March 20th.—Between these two dates no particular notes were taken; the pleuritic effusion gradually decreased, but the liver became more and more enlarged. At this time he was taking port wine daily, and a quarter of a grain of morphia pill at night. On examination to-day the edge of the liver is to be felt a quarter of an inch above the umbilicus, and extends with the usual curve to the right and left; the veins on the surface of the abdomen are much distended; pain and tenderness all over the abdomen; fluctuation at a point about two inches above and to the right of umbilicus.

23rd.—Great swelling in right hypochondrium; fluctuation more distinct; tumor evidently pointing where fluctuation was first felt. Urine of a yellow-reddish color, contains bile, acid, specific gravity 1030.

27th.—The liver was punctured by a small hypodermic syringe, and pus drawn off. A large trocar was then inserted, and about eight ounces of fluid, with small gelatinous masses, was drawn off. The canula was left in and plugged. Brandy, six ounces daily.

28th.—The syringe was again inserted, and two or three ounces of a similar fluid evacuated. Has had a rather restless night; pulse 128, small and wiry. Patient is becoming very emaciated; countenance anxious and flushed; pain in the abdomen much relieved since operation; takes his food tolerably well. Fish diet, also six ounces of port wine and six ounces of brandy daily.

30th.—An incision was made, and about ten ounces of offensive pus, with a large quantity of gelatinous masses containing hydatids, evacuated Two grains of quinine mixture to be taken thrice a day.

31st.—This morning fifty ounces of pus, extremely offensive, were discharged (more remaining behind). The liver was thus reduced in size by about two inches, and tension removed. No tenderness, except at the edge of the wound. Pulse 104. No sleep last night.

April 1st.—Slept well, owing to an opium draught, which was substituted for the morphia pill. Pulse 112. Eight ounces of fluid evacuated.

2nd.—Sleepless night; pulse 127; six ounces of fluid evacuated.

3rd.—No sleep; pulse 140; four ounces of fluid discharged. Stimulants increased.

4th.—Sleepless night; pulse 180; cannot take his food so well; twenty ounces of fluid evacuated.

5th.—Passed a better night; pulse 140; eight ounces of fluid evacuated; has a blush of redness to the right of the incision; carbolic acid (1 to 100) injected without pain; bowels relaxed last two days. Stimulants *ad libitum*.

6th.—Pulse 180, smaller; cannot take his food at all; ten ounces of discharge, which is distinctly colored with bile.

7th.—Pulse scarcely perceptible, 180; breathing labored. Died at 11.55 P.M.

At the post-mortem examination, the body was found to be much emaciated, the outline of the liver being clearly visible. The liver itself occupied nearly the whole front of the abdomen, and encroached on the thorax, especially on the right side. It was generally adherent to the front abdominal wall (the spot of puncture being firmly adherent). Left lobe very much enlarged in length and width, but very thin, and covering the stomach, which was pushed to the left side. Right lobe almost entirely converted into a cyst or abscess, the walls of which were composed of thin discolored liver tissue, not thicker than from one-eighth to one-fourth of an inch—except below, where there was unaltered liver tissue. The whole upper surface of the right lobe was firmly adherent to the diaphragm; below, to kidney and abdominal walls, where the cyst burst while detaching it, whereby several pints of fluid escaped, containing pus, with globules of lymph and gelatinous cysts. Both lungs were congested, and adherent to pleural walls by recent adhesions, with effusion in pleural cavities Other organs healthy.

GREAT NORTHERN HOSPITAL.

CASE OF CONCUSSION OF BRAIN, FOLLOWED BY SYMPTOMS OF IRRITATION AND A SUCCESSION OF FITS, CONTINUING AT SHORT INTERVALS FOR TEN DAYS; QUESTION OF TREPHINING: TREATMENT BY ANTIMONY; RECOVERY.

(Under the care of Mr. W. ADAMS.)

The following case, for the notes of which we are indebted to Mr. P. D. Hopgood, is interesting in connexion with the question of trephining which so often arises under like circumstances, and about which there is still much difference of opinion amongst surgeons.

F. P——, aged twenty-three, a healthy and very temperate man, was brought to the hospital, in a partially unconscious state, on Feb. 4th, 1868, having fallen from the top of a high cart, striking his head against the pavement. He was completely stunned by the fall; but in a few minutes spoke to those around, wishing to remain quiet. A few minutes after the accident he was taken in a chair into a house, and left for a while. During the interval he walked by himself up stairs, undressed, and went to bed,—where he was found when the attendants went to look after him. About an hour after the accident he vomited his dinner, mixed with some blood. At this time he became unconscious, but was very restless, curling himself up in bed, and pulling the clothes over his head. Afterwards he became somewhat sensible, and was very obstinate in being dressed previous to being taken to the hospital.

The patient was brought in a cab to the hospital at 6.30 P.M. Directly he was taken into the surgery he began to vomit blood in small quantities, mixed with food and fluid from the stomach. The surface of the body was cold, with pulse 60, feeble, and he persisted in curling himself up, and pulling the blanket he was wrapped in over his head. The pupils were contracted, and sensible to light. On examining the head, no wound was found; but there was a distinct depression, about the size of a shilling, on the posterior part of the right parietal bone. He was somewhat conscious, and his face rather flushed. Ordered beef-tea and milk, ice to the head, and hot bottles to the feet. Reaction took place in a few hours, the body becoming warm, and the pulse rising considerably; breathing quiet. Late same evening: pulse 80, feeble; breathing quiet; seems inclined to sleep.

Feb. 5th.—No more vomiting. Got out of bed to pass water. Complains of great pain in the head. Ordered croton oil, one minim, immediately; tartrate-of-antimony wine, twenty minims, every four hours.

6th.—No sickness. Pain continues. Bowels open freely. Surface of body warm.

7th.—Has had several fits during the day; left side convulsed. Passes motions in bed. Pulse 96, feeble. Fits continue. Catheter passed twice daily. Ten leeches applied to temples. Pulse 100. Right pupil dilated.

8th.—Pulse 84. Breathing inclined to be stertorous. Left arm paralysed. Pupils contract with stimulus of light. Has been taking tartrate-of-antimony wine, twenty minims, every four hours. Skin warm and perspiring. Violent convulsions every few minutes. (In the fits, the eyes are turned up and to the left; twitchings of face and whole of left side.) There was a consultation with Mr. Gay to consider the operation of trephining. Mr. Adams thought the symptoms of cerebral irritation probably depended upon some spicula of depressed bone, but as it was difficult to define the exact spot at which the trephine should be applied, it was decided to wait for further symptoms.

9th.—Pulse 96, very feeble. Pupils sensitive to light. Breathing quiet.

10th.—Pupils dilate thoroughly with atropine. Pulse 64. Fits continue every few minutes; conscious between them.

11th.—Pulse 96. He is unconscious. Fits continue.

12th.—Fits continue very frequent. Pulse 100. Conscious between fits. Refuses nourishment; does not complain of pain.

13th.—Pulse 120. Fits very frequent. Depression in parietal bone plainly felt. Unconscious between fits. Continues the tartrate-of-antimony wine every four hours.

14th.—Eight fits during the day. Pulse 120.

15th.—Pulse 100; conscious; only one fit, in which the whole body was convulsed.

16th.—Six fits during the night; passes urine; pulse 96; much better; quite conscious.

17th.—Left arm paralysed; still continues tartrate-of-antimony wine; sleeps much.

18th.—No fit; talks indistinctly; sleeps a good deal.

19th.—Very comfortable.

21st.—Improving; no fit.

25th.—Complains of being hungry.

March 5th.—Takes food well; improving fast; remembers nothing about the accident.

17th.—No bad symptom.

April 30th.—Discharged well.

This man was seen by Mr. Hopgood in December, 1868, and he continued in good health, and able to follow his occupation; but had had three or four fits, not, however, of a severe form. He suffered from headache after stooping, or if he took more than one glass of ale daily. He had never been subject to fits before the accident.

HOSPITAL FOR CONSUMPTION, BROMPTON

CASE OF FATAL HÆMOPTYSIS; WITH REMARKS.

(Under the care of Dr. SANDERSON.)

The relation of hæmoptysis to phthisis is one of the prominent questions of the day. Dr. Douglas Powell has obliged us with the following notes and remarks bearing upon it.

R. W——, aged twenty-five, admitted into the Brompton Hospital Jan. 4th, 1869. Patient was a stoker; had suffered from cough for three years; no hereditary predisposition to phthisis; had measles when a child, followed by bronchitis;

never had hæmoptysis; had night-sweats six months ago, not since. Weight on admission, 8 st. 13 lb.; pulse 108.

On examining the chest, the breath-sounds were found to be everywhere harsh, and crepitation was audible in various situations—namely, left base, right supra-spinous fossa, and third cartilage; there was no dulness on percussion.

Patient made fair progress, under treatment by tonics and oil, until March, when the cough became more troublesome, and he lost weight. On the 11th of March he had hæmoptysis to the amount of two ounces. On the 13th this was repeated to the amount of two pints; and the patient died from exhaustion on the 17th.

Autopsy, thirty hours after death.—Body not emaciated; muscles well developed, and of good color. Heart healthy; an entangled fibrinous coagulum in the left ventricle and auricle. Both lungs adherent; pleura but little thickened. The apex of the left lung was partially consolidated and œdematous; and presented at its summit some pale granular pneumonic nodules of the size of peas, also scattered grey points surrounded by pigment. At the upper part of the lower lobe, immediately below the septum, there was a cavity of moderate size, sharply defined, with a wall of firm induration only one-sixteenth of an inch in depth. This cavity contained at its lower portion some clotted blood, and at its upper and inner part was seen a small pulmonary aneurism, very widely ruptured, the opening being closed by partially decolorised coagulum. A vessel filled with recent coagulum was traced from one of the main branches of the pulmonary artery to the aneurism. The remainder of the lung was emphysematous, with some scattered horny points surrounded by pigment. At different portions of the right lung, but more particularly at the anterior base, were found patches of granular pinkish consolidation, surrounded by more or less congestion and dark discoloration. These patches, from their appearance and the staining around them, had evidently resulted from lobular inflammation secondary to the inhalation of blood.

Remarks.—This case has a certain value in its bearing on the question of hæmoptysis being a cause of phthisis, since it affords positive evidence that blood inhaled into the air-vessels may, in a patient strongly predisposed to pulmonary phthisis (the disease was in this case confirmed and steadily progressing), lead to a lobular pneumonia of a phthisical character. In this case the hæmorrhage was the result of old-standing pulmonary disease, which had laid bare a large vessel, and deprived it of its natural support; the effect of the hæmorrhage can only be looked upon as a determination of a disease already progressing in other parts of the lung to a portion at yet untouched. This case, then, though it gives a graver import to hæmoptysis as a complication in phthisis, does not touch the question raised by Niemeyer, and brought forward at the Clinical Society by Drs. Baŭmler and Weber—viz., Is phthisis ever the result of hæmoptysis? Experience alone can settle this point; and the fact that Drs. Weber and Baŭmler are satisfied of the cases they quote being of that origin answers the question with affirmation. But Dr. Powell thinks that most observers will agree with Dr. Weber in his very guarded and valuable observation at the Clinical Society, to the effect that hæmoptysis is not so common a cause of phthisis as Niemeyer believes. Of eleven cases of hæmoptysis, not one was followed by imflammatory symptoms. His own opinion is that hæmoptysis is a most exceptional form of phthisis. Cases of bronchial hæmoptysis are not uncommon, especially in females in early pregnancy, commencing menstruation, or associated with menorrhagia and other serious hæmorrhages. These cases very seldom exhibit subsequently the signs of pulmonary phthisis, and the prognosis is very favorable. It must also be within the experience of many, how extremely difficult it frequently is, even after very copious pulmonary hæmoptysis, to detect any positive physical signs of disease; yet, if these cases are watched, signs of pulmonary mischief become evident—it may be some months later—at one apex. In these cases there must be, at the time of hæmoptysis, a great tendency to lung disease; and yet the hæmorrhage does not determine it. On the contrary, Dr. Powell thinks the older view of its salutary nature is more borne out by experience. On the other hand, fresh inflammatory mischief at one base is very frequently to be observed after hæmoptysis in cases of phthisis; hence the great importance of examining the bases after the occurrence of this accident. In some of these cases, no doubt, the fresh mischief is the result of the hæmoptysis, though in others the consolidation is found too immediately afterwards for this explanation to hold good. Out of seven cases of fatal hæmoptysis occurring at the Brompton Hospital since February, 1868, of which the source of hæmorrhage has been carefully looked for, in five it has been found to be rupture of a pulmonary aneurism, varying in size from a small pea to a walnut. In some of these cases the hæmoptysis had been repeated and copious, at intervals varying from a few days to a month or longer.

◆

WESTMINISTER HOSPITAL.

GLANDULAR PROLIFEROUS CYSTIC DISEASE OF THE BREAST; AMPUTATION; ACUPRESSURE NEEDLES; CARBOLIC-ACID DRESSING; RECOVERY.

(Under the care of Mr. Barnard Holt.)

The following case is related in illustration of the use of acupressure for the control of vessels, and of the application of carbolic-acid dressings. For the notes we are indebted to Mr. Frederick S. Palmer, house-surgeon.

R. B——, aged forty years, was admitted on March 4th. She stated that three years since, without any apparent cause further than what might depend upon the general derangement of her health, she noticed a small and somewhat elastic swelling occupying the centre of the left breast. It was slightly painful, and became more so if her dress was at all tight. A liniment was prescribed, which she employed for some time; but the swelling gradually increased in size, and the pain became severe, both upon exertion and during her monthly periods. Various kinds of treatment were adopted, extending over two years, but without diminishing the tumour or mitigating the pain; and as her health was now suffering, her nights restless, her appetite defective, and her nutrition impaired, she consulted Mr. Holt, who advised her removal to the hospital.

At the time of her admission, an elastic tumour, about the size of a small melon, was detected in the left breast, with a circumscribed hardness to its left side. The integument was adherent over the whole mass. She suffered severe continued pain, extending down the inside of the arm; and upon several occasions blood escaped from the nipple, sometimes in considerable quantities.

With a history so complete, the diagnosis, aided by the examination, was not difficult; and the disease was pronounced to be grandular proliferous cystic, or what was formerly called "sero-cystic sarcoma." The inability of laying open a cyst where solid matter could so easily be detected, decided Mr. Holt to amputate the entire breast; as, however, she was much emaciated, with a very intermittent pulse and slight bronchitic cough, Mr. Holt prescribed a tonic treatment, with daily gentle exercise in the open air, until her health became better. This treatment, aided by the administration of the bromide of potassium in half-drachm doses at bedtime (which produced tranquil sleep), having been successful, and the heart's intermission gradually ceasing, on March 23rd (nearly three weeks after her admission), while under the influence of chloroform, the entire breast was removed, leaving the fibres of the greater pectoral muscle fairly exposed to view. Mr. Lister's directions were rigidly adhered to, and Sir James Simpson's acupressure needles were employed; the edges of the wound were accurately approximated, and retained by the continuous suture; no strapping was used but the carbolic-acid paste placed over the wound. On the following day she suffered from sickness, the result of the chloroform, but she was relieved from her long-continued pain. The acupressure needles were removed; the edges of the wound were in excellent apposition; and the breast presented a perfectly healthy appearance On the fourth day the wire sutures were divided at several points, and removed without difficulty; the edges of the wound were slightly red, but adhesion had taken place; and, with the exception of one day, when a very small quantity (not a saltspoonful) of pus escaped from a point at which one of the acupressure needles had been, she made a perfectly good recovery. She left the hospital on April 6th with the wound healed, her pain entirely gone, and her health materially improved.

Mr. Holt remarked that this was a case in which the diagnosis was exceedingly easy, and where the propriety of the treatment could not be questioned. He dwelt upon the necessity, in all cases where operative measures were taken, to remove the entire breast, so that the fibres of the pectoral muscle were dissected cleanly, and could be easily detected; for although the present disease did not usually return, yet there were a sufficient number of cases recorded to show that it would do so if the whole gland were not entirely removed from the subjacent muscle. He alluded to the plan proposed by Mr. Lister, and referred to the present case as a further example of its results in procuring immediate union,—that result being in a great measure aided by the use of the acupressure needles, the employment of which saved the patient much needless pain in the after-dressing of the wound. The continued suture he always employs, and believes it to be much more efficacious than the interrupted one as well as being as easily removed. He considered the present a severe test of Mr. Lister's plan, as the condition of the patient was anything but favorable for rapid union.

CHARING-CROSS HOSPITAL.

VARICOCELE; RADICAL CURE.

(Under the care of Mr. Barwell.)

There now and then exist special reasons why a varicocele should be cured; as the removal of hindrance to recruiting, the occasional accompanying pain, atrophy of the testicle, real or dreaded, the mental obsession which disease of the genitals is apt to induce, &c. Some cases presenting one or other of these reasons for surgical interference have lately presented themselves at this hospital among Mr. Parwell's patients; and in them perfect cure has followed the most painless and simple proceeding. In his practice he deprecates the more violent methods,—such as tying together veins and scrotum in two places, division of the former, &c.; indeed, in the first volume of the Clinical Society's Transaction, a very disastrous case resulting from that operation is recorded.

The two subjoined cases give a sufficient account of the simpler means, not indeed new, but to which hardly enough attention has been paid.

Feb. 5th, 1869.—J. C——, aged twenty-two, of the Coldstream Guards; unfit for duty on account of varicocele; discharged, and, as he says, to be readmitted if cured. The varicocele is large; indeed, when he has been standing or walking about for an hour, it is as large as an orange.

13th.—Mr. Barwell separated the vas deferens and sphermatic arteries from the veins, keeping the former back and the latter forward; passed a needle, armed with annealed iron-wire, behind the veins—i. e., between them and the vas deferens,—beginning on the outer side of the scrotum, and bringing it out on the inner side of the cord. Then the needle re-entered the orifice of exit, passed in front of the veins, and came out at the point where it first pierced. Thus a loop of wire, passed completely round the veins, was lying inside the scrotum, but involving no part either of the skin or fascia. It is this arrangement which renders the proceeding so painless and so safe. The wire, when not too tightly twisted together, compressed the vessels, and a clot immediately formed at the distal side of the tie; the rest of the wire was twisted in the opposite direction, round a roll of lint. Every day the piece of lint was turned once round, so as to give an additional twist to the wire until the 20th—a week after the operation,—when the whole wire came away. It had, therefore, completely cut through the veins, and its loop was twisted up to a small eye that would have just permitted a mustard-seed to pass. There is no swelling of the testicle itself, but a good deal of loose swollen tissue around its back part. This is probably the severed ends of the veins. The testicle to be strapped.

26th.—Swelling very much diminished; re-strapped.

March 2nd.—Went out cured. He promised

to present himself again if he were not re-admitted to the regiment, but he has not returned.

Other cases are but repetitions of the above, save perhaps that of G. J——, aged nineteen, who would not come into the hospital, although he was suffering from pain and was in great mental distress. Mr. Barwell felt that he might trust this method even in out-patient practice, and he therefore tied the veins on March 13th, 1869. Contrary to his orders, the lad walked home, a distance of over a mile; but no bad symptoms resulted, and all went well till the 19th, when some pain came on, and swelling, not of the testicle, but scrotum; and on examination a little pus was found at the point of exit. By lifting the wire a few drops were discharged, and the pain shortly ceased. On the 22nd the wire came away; and in a week more (April 2nd), a hard lump, about as big as a horse-bean, and rapidly decreasing, was all that was left in the place of the old varacocele. By the 14th of April the lump above mentioned had quite disappeared, and there was no sign of the old malady.

◆

KING'S COLLEGE HOSPITAL.

FIBROUS THICKENING OF THE PYLORUS; PERFORATION; DEATH.

(Under the care of Dr. DUFFIN.)

We publish the following short note principally because of the effect which was produced upon the patient's distressing symptoms by the use of solid opium.

J. K——, aged thirty-nine, was admitted in November, 1868, suffering from chronic vomiting. She had begun to digest her food badly about eighteen months before admission. A year previously vomiting had supervened, and rapidly increased to three or four times daily. The dyspepsia had throughout the languid type, and no sufficient history of hæmatemesis could be elicited. She was greatly emaciated. The stomach was much distended, reaching half way between the umbilicus and the pubes. The semicircular greater curvature could be traced to the right hypochondrium, where a soft, pliable, sharply-edged tumor was to be detected, under which the fingers could with some care be inserted. This was diagnosed to be an irregular protrusion of the liver. No other tumor could be found. The vomited matters were abundant, and contained multitudes of sarcinæ. Creosote and the hyposulphate of soda were successively given to check the formation of the latter, without result. Bismuth also failed to check the sickness. Ultimately solid opium was resorted to at the rate of three to four grains daily. The vomiting fell rapidly to once in four to six days, the production of sarcinæ was materially checked, and undisturbed nights were procured. Thus matters progressed for five months till April 11th, 1869, when the signs of perforation came on, and she sank in twelve hours.

The post-mortem examination showed simple fibrous thickening around the pylorus, the orifice of which admitted the passage of the little finger; great distension with muscular hypertrophy of the rest of the stomach. A punched-out perforation of about the size of a fourpenny-piece existed in the anterior wall near the lesser curvature. The rest of the mucous membrane appeared perfectly healthy, no scars existing at any part, nor anything approaching to tumor. As had been diagnosed during life, the edge of the liver had simulated a growth near the pylorus.

◆

HOSPITAL OUT-PATIENT PRACTICE.

IN-GROWING TOE-NAIL.

This painful affection is often a source of great worry to the medical attendant, as it is always a misery to the unfortunate patient. Our readers will be glad to know what kind of treatment is found best in the large experience of our metropolitan hospitals. We are pleased, therefore, to have the opportunity of laying before them notes upon the subject from five well-known hospital surgeons, whose opinions will be read with interest and instruction.

KING'S COLLEGE HOSPITAL.

In slight cases of in-growing toe-nail—an affection which in the great majority of instances has its seat in the great toe only, and is caused by the lateral compression of the toe by the boot—Mr. Wood scrapes down the nail on the affected side until it is thin and yielding, like paper. The thickened skin overlapping the nail is then pared off with a sharp thin-bladed knife until it is close down to the raw, but not so far as to draw blood. A pointed stick of the nitrate of silver is then applied lightly to the painful ulcerated chink, and a small piece of lint, rolled up so as to fit into the groove of the nail, is dipped in glycerine and applied by means of a thin strip of adhesive plaster or small india-rubber band.

In cases where the mischief is the result of hypertrophy of the thick skin forming the lateral margin of the groove, and without any deformity in the shape or thickness of the nail itself, Mr Wood pares off skin, under ether spray, to a level with the nail, and then applies the pressure as before by means of a small roll of lint. If the toe-nail itself be broad, distorted, irregular, and bent laterally by the pressure, the best plan is to remove a triangular portion of the nail itself in the middle line, the angle reaching down to the centre of the nail. This allows the nail to fold up and accommodate itself to the limited space without digging in at the edges.

But if there be much ulceration, irritation, and distorted growth at the matrix of the nail itself—which in long-continued cases, and in scrofulous or syphilitic conditions of the system, is sure, sooner or later, to ensue,—the only plan from which effective relief can be obtained is by the time-honored but excruciating process of division into the quick, down the nail itself at the inner third, and evulsion of the affected part of the lunula from the matrix. In doing so, it is important to get all that part of the root away entire, as a small portion growing up with an irregular angle will cause a speedy return of the disease. In all cases it is important also so to regulate and ease the boot, during the renovation of the nail, that the skin should not again overlap and be forced down upon the edge, which always induces a return of the disease.

ST. MARY'S HOSPITAL

Mr. Norton never performs any operation in the treatment of in-growing nails. He applies, in the following manner, a solution of liquor potassæ (two drachms to one ounce). A piece of cotton-wool is saturated with the solution, and pressed gently down between the upper surface of the nail and the soft tissues, which latter are usually in the form of a fungous mass of granulations. The solution permeates the substance of the nail, and softens and pulpifies the superficial cells. The wool is kept continually moist with the lotion, and the softened nail-tissue is wiped away each morning. The nail in a few days becomes thin and flexible, and if desired, can now be pared away without pain, or it may be allowed to remain for a few days longer, when it becomes entirely removed by the solution. Mr. Norton considers it most essential in the treatment that the lotion be continued until all ulceration has disappeared, otherwise the too early hardening of the epithelium becomes again a source of irritation, and promotes a return of the disease, or rather prevents a cure from being effected.

Of the several cases treated by this method during the past two years, one of whom suffered from in-growing nails on both great and both second toes, not one patient has returned to the hospital, and, therefore, Mr. Nortonbelieves that in no case has there been a recur-rence of the affection.

ST. THOMAS'S HOSPITAL.

Mr. Croft finds that, commonly, patients suffering from this disease do not come under his notice until the affection has been some time in progress. In such cases it is his practice to adopt the radical cure advocated by Dupuytren, which is to divide the nail lengthways, and turn out the in-growing half of the nail. In all but the hardiest patients he employs the ether spray to benumb the toe. He prefers to cut down the centre of the nail with a strong short scalpel, and then to raise the half-nail to be removed, by forceps (using the latter as a wedge), before plucking it from the matrix. In other cases he slits up the nail with scissors. He prefers this radical plan of treatment in advanced cases, because it saves the time of both the patient and surgeon, and because other plans include, besides time, frequent skilled dressings, of which poor people are rarely capable. In an early stage, Mr. Croft cuts out the corner of the in-growing nail, cauterises the granulations deeply with nitrate of silver, places a small pad of lint on the cauterised spot, and then, by means of a long narrow strip of plaster winding round the toe from the unaffected side, fixes the pad firmly in its place, at the same time directing its pressure *from* the nail. Under this treatment, well carried out, he finds cicatrisation soon takes place. Absolute rest is enjoined. The nail requires to be kept carefully trimmed.

Mr. Croft has just cured, by the radical plan, the brother of a girl who had suffered from in-growing nail in both great toes. The second toe became affected some months after the first had been cured.

UNIVERSITY COLLEGE HOSPITAL.

Mr. Christopher Heath has never seen any good result from paring the center of the nail, or applying caustic to the exuberant granulations overlying its margins. He has always found the simplest and most satisfactory method of treatment to be, to take a narrow slip of the nail away with the scissors and forceps, taking care to extract the whole depth of the nail, which is not always easy owing to the sodden condition in which the tissue has been kept for a length of time, by which it is rendered very friable. When the edge of nail thus extracted is examined, it almost always presents a rough serrated margin, and it is this which causes the irritation. After the removal of the source of irritation, the use of careful dressing with lint gently pressed down by the side of the nail, is necessary to repress the granulations, and the use of a lotion of nitrate of silver or sulphate of copper (two grains to the ounce) has been found very advantageous. Mr. Heath finds it necessary to warn patients who have suffered from in-growing nail to wear wide-toed boots, and to keep the sulcus between the nail and the flesh clear of epithelium. They should be careful also to apply for relief the moment they feel uneasiness from the nail, when a perfectly painless removal of a small portion of the nail prevents further mischief.

In inveterate cases, where the nail and toe are deformed, the former being very much in-curved, Mr. Heath recommends the removal of a slip of nail on each side, and the destruction of the corresponding portions of matrix, under chloroform, either by removal with the scalpel, or the application of the actual cautery. This lays the patient up for a few days, but effects a permanent cure. Mr. Heath believes that it is never necessary to remove the entire nail, by splitting and avulsion, as is often recommended.

WESTMINSTER HOSPITAL.

Mr. Francis Mason has had under his observation at this hospital during the last few months an unusually large number of cases of in-growing toe-nail. Mr. Mason believes that the plan ordinarily recommended of cutting the toe-nails as we do the finger-nails—that is, of rounding their corners—often induces the condition it is intended to obviate. He has generally found that the so-called in-growing toe-nail has been primarily caused by injury in trimming the nail. Too much of the corners is removed, and a sensitive and occasionally a bleeding surface is left. The patient will soon after perhaps wear a tight boot, or possibly may take a long walk. In the act of walking, the tender surface is pressed up against the slowly-growing nail, causing increased irritation, and giving rise to those painful granulations invariably seen, in different degrees, in such cases. Mr. Mason therefore advises that the free edge of the toe-nail should be cut square. Respecting the treatment of in-growing toe-nail, the plan which Mr. Mason has most confidence in is this: A sharp-pointed stick of solid nitrate of silver is applied with some vigor to the base or under-surface of the painful granulations, and a small piece of dry lint, or lint dipped in black mercury lotion, is then carefully inserted, and the whole toe surrounded with water dressing. An astringent or other lotion, according to circumstances, may be subsequently employed. The highly sensitive surface is thus destroyed, and the patient is enabled to attend to his business in comparative comfort. Such a plan of treatment has been found uniformly successful in Mr. Mason's hands, and he believes that occasional apparent failures are due to the method not being thoroughly carried out. It should be remembered that it is useless merely to touch the surface of the granulations with the caustic; the base is the part to be attacked. If the operation be efficiently performed, it is doubtless attended with considerable pain for a moment; but the pain is reduced to a minimum by the use of the ether spray, and especially if the caustic be well pointed, instead of being, as so often happens, broad or angular at the extremity. Evulsion of the nail is seldom required for this condition, being more suitable—indeed necessary, combined sometimes with the free application of the strong nitric acid—in cases of disease of the matrix, questionably entitled "onychia maligna," which is not unfrequently met with on the fingers of unhealthy and ill-fed children.

Clinical Records

OF

THE PARIS HOSPITALS.

HOPITAL LARIBOISIERE.

EXTENSIVE PERFORATION OF THE STOMACH, ATTENDED BY PERITONITIS, WITHOUT ANY LOCALISED SYMPTOMS DURING LIFE.

(Under the care of Dr. MILLARD.)

The patient was a man of sixty-five years of age, and had led a tolerably comfortable life. On entering the hospital, on February 5th, there was general soft œdema, which extended to the face. The urine was normal and the heart healthy. The patient had never had hæmorrhage. From what he said it was inferred that the disease had made its appearance four months previously: there was then a swelling of the legs, accompanied by general weakness, and this swelling had disappeared and returned at different intervals.

On examining the surface of the body, a large pemphigus bulla was discovered on the right leg whilst the left showed a large, sore patch, probably due to pemphigus.

Feb. 20th.—For some days the patient has lost flesh and has had excessive diarrhœa. With the increase of diarrhœa, the œdema has gradually disappeared, and the change thus produced adds to the emaciated aspect of the patient. The urine has been repeatedly examined, and no traces of albumen had been discovered.

21st.—The diarrhœa disappeared this morning, and returned in the evening. The patient passed water without knowing it.

24th.—Patient was in a moribund condition, the face being extremely emaciated. Death occurred during the day without being attended by any phenomenon worthy of being noted.

Post-mortem examination.—Abdomen: General peritonitis, with a great quantity of pus, and soft false membranes. Liver connected with the stomach by soft false membranes, which easily gave way as the liver was detached, and disclosed a perforated ulcer of the stomach, as large as a half-franc silver piece. On separating the stomach from the transverse colon, another perforated ulcer was discovered, of the size of a five-franc silver piece. No effusion of intestinal matter in the peritoneum. The liver and kidneys were in a somewhat fatty condition. The heart showed no signs of disease, except some milky patches on its surface. There was an emphysematous condition of the lungs. Thick false membranes covered the pleura.

HOPITAL NECKER.

CÆSAREAN OPERATION POST-MORTEM; BIRTH OF A LIVE CHILD.

(Under the care of M. GUYON.)

The patient on being admitted into the hospital was in a state of profound apathy, and could scarcely give any information touching her condition. As far as could be gathered from her random answers, it appeared that she first fell ill about ten days before. On being asked where she felt pain, she pointed to the stomach. She had scarcely any fever, very slight cough, abundant diarrhœa, no typhoid maculæ on the abdomen, and a furred tongue without sordes. Since the beginning of her pregnancy—which was approaching its end at the time of admission—she had had several fits of convulsions. She had never had any attacks before pregnancy. During the fifteen days she remained in the wards the urine was examined several times without any traces of albumen being ever detected. Eight days after being admitted she had a convulsive fit. The attacks subsequently recurred four or five times before the death of the patient. They all took place in the absence of the surgeon and house-surgeon, but the sister of mercy described them as being epileptiform seizures, of a somewhat violent character. At almost every attack the patient had fallen out of her bed, and during the whole time of the fit had remained insensible.

The last attack commenced at about half an hour before the death of the patient. She was in a moribund condition when M. Alling, the house-surgeon, saw her. The abdomen was carefully auscultated, in order to discover the fœtal heart; but the pulse of the mother furnishing 160 beatings, it was impossible to make out whether the child lived. A few minutes after the death of the patient, however, the Cæsarean operation was performed by M. Alling and one of his colleagues, M. Molinier. At first the child gave no signs of life, but, on the ordinary means of resuscitation being resorted to the heart began to beat, respiratory movements occurred, and the child uttered a cry.

The interesting points of this case may be summed up in a few words: the intense morbid condition of the mother; her repeated falls from the bed without causing any injury to her child; a protracted and violent agony, which extended over half an hour; and notwithstanding the impossibility of detecting the beatings of the child's heart, the speedy determination to perform the operation, which was crowned with success. A few days after the child was sent into the country in the charge of a wet nurse.

We are indebted to M. Alling for the notes of the above cases.

Provincial Hospital Reports.

SHEFFIELD PUBLIC HOSPITAL.

DILATATION OF RIGHT SIDE OF THE HEART IN A PEDESTRIAN.

(Under the care of Dr. J. C. Hall.)

The following case helps to illustrate the fact that severe training, and especially running conduces to dilatation of the right side of the heart, and aneurism. Mr. Algernon Taylor has obliged us with the notes.

Richard M—, aged fifty, was admitted into the above institution on Feb. 3rd, 1869, with urgent dyspnœa. He stated that he had been for many years a trainer and professional race-runner, and that on one occasion he had walked a thousand miles in a thousand consecutive hours. There was no history of syphilis. He was a short muscular small-made man, complaining of a great deal of pain in the præcordial region, and great difficulty of breathing, which was increased on the slightest exertion. There was slight prominence of the cardiac region; rhythm of the heart irregular; first sound unnaturally clear at the apex, second sound normal, immediately followed by a slight murmur heard over the course of the aorta; some œdema of the legs. He was ordered tonics, &c., and ordinary diet.

On February 28th, he coughed up about three pints of blood, and died in about three minutes.

Post-mortem.—Heart: Right side very much dilated; fibres apparently softened; left ventricle slightly hypertrophied. At the back and upper part of the arch of the aorta, and pressing on the trachea, with which it communicated by a small opening, was an aneurismal tumour, about the size of a hen's egg. Every thing else was healthy.

CUCKFIELD WORKHOUSE INFIRMARY.

CALCULUS IN THE BLADDER; LITHOTOMY; RECOVERY.

(Under the care of Dr. C. E. Saunders.)

W. U——, aged sixty-two, a stone-breaker, was admitted Nov. 28th, 1868. The patient states that he has always enjoyed good health until two years ago, when he began to suffer from symptoms of stone, which he has endured uncomplainingly until now, when he declares his sufferings to be "unbearable."

On introducing a sound, a large smooth calculus was readily struck. The prostate was considerably enlarged. On December 16th, the patient having been placed under the influence of chloroform, the lateral operation of lithotomy was performed by Dr. Saunders, a large flat lithic-acid calculus being removed, the measurements of which were two inches and seven-eighths long, by one inch and a half broad, and five-eighths of an inch thick; and the weight one ounce, one scruple, and five grains. There was no difficulty in finding and seizing the stone; but, owing to its being flat, the forceps could hold it by their *edges only*, their concave surfaces not being in contact with the stone at all, and thus acting almost as cutting instruments. A small portion of one of the concentric layers of which the stone was composed was chipped off, but fortunately at the extremity nearest the wound, and when the stone, or at least that part of it, was external to the bladder, so that the fragment was easily removed by the fingers. But in order to make quite sure that no detritus remained behind, the bladder was well washed out with tepid water. A tube was introduced (which was removed at the end of thirty-six hours) and the man removed to bed.

17th.—Had a good night; water passed freely and was quite bloodless; pulse 80; tongue clean; no pain. The patient made a good recovery, literally without an ache or pain; in fact, the only claim the case has to notice is the singular immunity there was from any constitutional symptom subsequent to the operation.

20th.—Enjoyed a mutton-chop.

Jan.—3rd, 1869.—Wound nearly healed; water passes freely by urethra. Is up and dressed, "comfortable, happy, and enjoys himself."

19th.—Discharged cured.

Medical Societies.

JULY—AUGUST.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Dr. Burrows, F.R.S., President, in the Chair.

ON NEPHROTOMY AS A MEANS OF TREATING RENAL CALCULUS.

By Thomas Smith, F.R.C.S.,

Assistant-Surgeon to St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children.

The object of this paper is to introduce to the notice of the Society, for discussion and consideration, a method of treating stones in the kidney and ureter, that the author deems worthy of more thoughtful deliberation than it has hitherto received. The operation of nephrotomy, though mentioned and recommended, with certain reservations, by Hippocrates, was by him and his followers restricted to cases in which there was an external swelling, cases in which, as they expressed it, "Nature showed the way." Even in this limited application, it is doubtful if the operation has ever been performed, except for the relief of renal abscess. So far as the author can ascertain, nephrotomy has been but once employed for the extraction of calculi from the kidney or ureter. This case, which occurred in the seventeenth century, is detailed in this paper. The operation was performed on the person of Mr. Hobson, the British consul at Venice, from whose kidney an Italian surgeon successfully removed two or three small stones, by an operation performed in the lumbar region. Mr. Hobson subsequently visited England, and was seen and examined in London by competent medical men, who have given an account of the case in the "Philosophical Transactions." In discussing the subject of the paper, the author lays down as most desirable,—1st, that we should be able clearly to recognize the existence of stone in the kidney; and, 2ndly, that an operation should be devised for the removal of the stone which should not put the patient's life in a danger disproportionate to the gravity of his disease and his desire for relief. A method of examining the kidney by palpation is described by which the author has been able in one case to recognize the existence of tubercular deposits in the infundibulum of the ureter. Should it be impossible from any circumstance to employ this method of examination, so as to recognize a renal calculus, the author is of opinion that in some cases the subjective symptoms alone are so pathognomonic, that the diagnosis might be considered sufficiently clear to proceed to operation; since, by the plan of operation recommended in the paper, the kidney could be made the subject of tactile examination without serious danger to life. A plan of operation is detailed by which the pelvis of the kidney can be reached so as to examine it with the forefinger without injury to any important structures.

Whether the performance of this operation would enable a stone to be removed without fatal damage to the renal tissue would (in the author's opinion) depend largely upon the shape, size, connexions of the stone or stones, and the physical formation of the patient; and while he confesses that there are cases of long-standing branched calculi that could not be removed without inflicting unjustifiable injury to the kidney or the surroundings, yet he believes that he has met with renal calculi that could have been removed without any such violence. If the conditions affecting the removal of the calculus were unfavorable, he believes that the operation would reveal these conditions without injury to the renal tissue, and could then be abandoned without having placed the patient's life in serious danger.

The author thinks that the possibility of removing a stone from the kidney by nephrotomy should first be decided by operation on the dead body of one who has died with a stone in the kidney. He hopes that this experience may shortly be forthcoming, either by others performing the operation themselves on patients who may have died with the disease, or by the kindness of some surgeon giving the author an opportunity of performing the operation under similar circumstances; and this is one of the chief reasons why the author has made this communication to the Society.

Mr. Curling thought the paper, although unsupported by cases, a most valuable one, considering the nature of the disease. Two points were to be considered, the practicability of diagnosis and of extraction. In children he thought the disease rare, but it was not so in the adult, and in the latter the difficulty of diagnosis was greatest. Still the subjective signs were pretty certain. Then, supposing the existence of a stone demonstrated, could it be removed? In the cutting part there was no very great difficulty or danger. In colotomy he had often had his finger on the kidney, and had found no difficulty in reaching its pelvis. Were the stone in the pelvis, there would be no great difficulty in removing it. But in the museum at the College of Surgeons there were plenty of specimens to stagger the surgeon. The symptoms might depend on calculi in the calyces, and there would be great difficulty in removing these. In itself the operation would be neither difficult nor dangerous, but its results were more doubtful.

Mr. T. Holmes said that Mr. Smith had himself shown the great difficulty in diagnosing such cases. He had seen the case referred to, and had coincided in the opinion; yet it turned out to be wrong, as the swelling was tubercular. This was evidence of the initial difficulty. Only in children, as a rule, could we detect the stone; but in adults, notwithstanding the symptoms, how were we to know in which kidney the stone was situated? In the case related, the seat of the stone must have been known, and could be pointed out, and probably the stone lay outside the kidney, so that that organ would not be cut at all. Further, calculi frequently existed without any indication of their presence.

Mr. Kiallmark thought that, as to telling in which kidney the stone lay, that was easy enough from the pain; but even if the situation was known, was the operation justifiable except when suppuration was present?

Mr. Maunder had taken the opportunity of performing the operation on the dead subject, and found very little difficulty in exposing the kidney, especially on the right side. The danger of an exploratory operation would be comparatively slight, judging from that of colotomy. As to diagnosis, if there were any difficulty there would probably be found a stone in both. Many years ago, when dealing with the subject, he removed one of the kidneys of a kitten, which did well; not so in the case of a grown cat.

Mr. Callander asked which edge of the quadratus he took for guide; to which Mr. Maunder replied that he took the outer one.

Mr. C. Moore thought it important to make up our minds as to the condition of the kidney itself, as this were always important after an operation. If a stone were present the kidney would be probably so much damaged as to cause death itself. Again, as to the stage of the disease: if the operation was too early performed, no stone might be found; if too late, it might be unnecessary, as the stone might be encysted.

Mr. Spencer Wells said he could answer the objection raised by Mr. Moore, as he had seen three cases where renal calculi had caused extensive suppuration, yet the patients had recovered perfect health after the escape of the calculi. When a surgeon in the navy, he opened a lumbar abscess in a seaman; a large quantity of pus escaped, and then a calculus as large as a scarlet-runner bean. Ten or twelve years ago he opened an abscess by the side of the rectum in a gentleman, and after the pus escaped, he removed a small calculus, which Dr. Bence Jones examined, and said was nearly pure uric acid. In all probability this had been arrested in one of the ureters just before it entered the bladder. The third patient was a woman who had a large cyst of the right kidney, which he treated by tapping and drainage. Two calculi afterwards passed into the bladder, and away by the urethra. These cases proved that patients may regain complete health after a renal calculus has set up extensive suppuration. It was even more likely that success would follow nephrotomy, if a calculus could be removed before it had caused so much damage to the kidney.

Mr. Smith, in reply, admitted the difficulty both of diagnosis and extraction, and he only suggested the operation now. The vertical incision was the easiest. No doubt many calculi could not be extracted, but if these were very common they would not get into our museums. He would only operate where the diagosis was well-marked.

A THIRD SERIES OF 100 CASES OF OVARIOTOMY, WITH REMARKS ON TAPPING OVARIAN CYSTS.

By T. Spencer Wells, F.R.C.S.,

Surgeon-in-Ordinary to Her Majesty's Household, and Surgeon to the Samaritan Hospital.

The author has arranged in a table all the cases in which he has completed the operation of ovariotomy, from the 200th case included in previous papers to the 300th. In other tables he gives particulars of all his incomplete and exploratory operations. He finds that the mortality lessens as experience increases. Of the first 100 cases, 34 died, and 66 recovered. Of the second 100, 28 died, and 72 recovered. But of this third series of 100 cases, only 23 died, and 77 recovered.

The author has endeavored to ascertain what influence tapping ovarian cysts may have upon the mortality of subsequent ovariotomy, and he has arranged in a table all his cases where tapping had never been done, and those in which it had been done from once to sixteen times. The general mortality of the 300 cases was 28·33 per cent. Nearly one-half of the patients, or 135, had never been tapped. In them the mortality was 27·40 per cent.—not one per cent. less than the average mortality. Rather more than one-fourth of the patients, or 78, had been tapped once. In them the mortality was 25·64 per cent. There were 19 who had been tapped three times, and the mortality was 26·32 per cent. Of the 36 who were tapped twice the mortality was exactly the same as that of the group of cases tapped from four to sixteen times,—namely, 33·33 per cent.

The author is led by these facts, and by other considerations discussed in the paper, to the following conclusions:

1. That one or many tappings do not considerably increase the mortality of ovariotomy.
2. That tapping may often be a useful prelude to ovariotomy, either by giving time for the general health to improve, or by lessening shock when the fluid is removed a few days or hours before removing the more solid part of an ovarian tumor, and
3. That when the syphon-trocar is used in such a manner as to prevent escape of ovarian fluid into the peritoneal cavity, and of entrance of air into the cyst, the danger of tapping is very small.

Dr. West agreed with Mr. Wells as to tapping being of service, especially as a preliminary operation which might satisfy the surgeon, the patient, and her friends. In most cases the patient cannot be said to die of the tapping. We were apt to be dazzled by the success of ovariotomy. He would not speak so, were it not necessary for him to, as it were, recant his former opinions. He could, therefore, with greater grace advocate the use of the minor operation. He would ask if anyone now used iodine after tapping?

Mr. Spencer Wells, in reply to Dr. West, said that he had lately conversed with M. Nélaton and M. Boinet, who had both large experience in the treatment of ovarian cysts by iodine injections, and he found that they had both arrived at the same conclusion as his own experience of seven cases would lead to. Of his own seven cases, only one patient was alive who had not since undergone ovariotomy. This one was still in tolerable comfort nearly ten years after the injection; but a rather large cyst could still be felt. If a cyst was unilocular, with thin walls and limpid contents, then, after tapping and injecting iodine, a radical cure occasionally followed. But it was very doubtful whether iodine had much or anything to do with the cure, because tapping alone, without the use of iodine, in this form of cyst was also occasionally completely successful. No more fluid was secreted, the cyst collapsed, its walls probably coalesced, and after a time no trace of it could be detected by the most careful examination. When the contents of a cyst are viscid, iodine is quite useless. In such cysts, and in multilocular cysts generally, injections of iodine should be restricted to cases where for some reason ovariotomy cannot be performed, but where a cure may be hoped for after suppuration and drainage. Here washing out the cavity, once or twice a day, or oftener, with plenty of iodine in solution, becomes very useful, by deordorising the offensive secretions, and probably by preventing absorption of putrid fluid and blood-poisoning.

ON THE TREATMENT OF PHTHISIS BY PROLONGED RESIDENCE IN ELEVATED REGIONS.

By Hermann Weber, M.D.F.R.C.P.,

Physician to the German Hospital.

Dr. Weber premises that he uses the term "phthisis" to signify not only "tubercular phthisis," but all the different subacute and chronic inflammatory processes of the lungs usually leading to consumption, especially catarrhal pneumonia and its products; regarding, with Thomas Addison, "inflammation as the great instrument of destruction in every form of phthisis," and sharing, with some modification, the view of Buhl and other authors, that true tuberculosis is not a primary, but a secondary disease,—the result, not necessarily, of preceding inflammation, and especially of the cheesey transformation of the products of inflammation.

He understands by "elevated regions," those localities where phthisis, owing principally to to their elevation, does either not, or only rarely, occur amongst its inhabitants; and points out that the elevation necessary for producing a certain degree of immunity is not an absolute one, but varies in different latitudes, and seems to decrease with the removal from the equator towards the poles. He, however, does not believe that there is any fixed elevation of immunity for every degree of latitude; and is, further, not of opinion that the elevation in itself is the sole cause of immunity, but that it is materially assisted or counteracted by other climatic elements, as the situation of a place on table-land, or on the top or on the slope of a hill, or at the bottom of a valley; the aspect to the north or south; the configuration of the surrounding ground; the nearness of standing waters or marshy districts, and the elevation of the place above them; the habitual degree of clearness or mistiness of the atmosphere, its purity, or the degree of admixture of foreign elements, mechanical and organic; the geological structure of the soil, and all the circumstances influencing its degree of dampness or dryness, regarding which subject he specially points to the important results of Bowditch and Buchanan's researches.

The author then expresses his astonishment that, in spite of the works of Archibald Smith, Mühry, Hirsch, Jourdanet, and others, there is still amongst medical men a great disinclination to sending consumptive patients to high elevations; and he endeavors to prove that the usual objections are entirely unfounded; that cold is not injurious to delicate persons threatened with consumption, but, on the contrary, often beneficial; that it is not correct that in Alpine health-resorts the great cold of the winter altogether prevents invalids being in the open air; that hæmoptysis is not more frequent, but more rare, in moderately high situations; that the principal morbid processes leading to consumption are counteracted; and that the tendency to acute affections (catarrhal and inflammatory) in consumptive conditions is likewise not increased, but diminished.

Dr. Weber then gives a description of seventeen cases treated by prolonged residence on high-level health-resorts, these being not selected, but all the cases which at one time or other came under his own observation, and of which he knows the final result. He refers to fourteen other patients, who are still residing in elevated regions, and regarding whom the final result is as yet unknown. He has, however, reason to think, from written reports, that the progress of these fourteen cases is favorable. The treatment adopted during the stay on high elevations was in most cases only dietetic and hygienic, except during intercurrent acute affections.

The effect of the high-level plan may be described as decidedly satisfactory in fifteen out of seventeen cases, undecided in one, and unsatisfactory in another. None of the patients have died in high elevations. Two, in early stages of subacute phthisis, had been, as shown by the post-mortem examination, quite cured by a prolonged stay in their native mountains, but were some years later, after their return into unhealthy localities and occupations, seized with fresh attacks, rapidly leading to death. Two other patients had been, to all appearance, likewise cured by residence in high regions, but were later, while living in low regions, again attacked by fresh pneumonic affections, with fatal termination. The remaining eleven cases may be regarded, up to this time at least, as cured; most of them had likewise fresh attacks or relapses, sooner or later, after having again settled in low elevations; but a second and third more prolongod stay on high ground led, as far as can be judged, to final cure, provided the prolonged exposure to unfavorable influences be avoided. Some of these patients had previously spent one or several winters in warmer, low-level health-resorts (Egypt, Algiers, the Riviera), without having derived the same amount of benefit as they did on high ground, where they were more free from catarrhal and other intercurrent acute affections. Some had one or several attacks of hæmoptysis while in low elevations, but none while on high ground. Of all the thirty-one cases, including the fourteen still under treatment, only one had an attack of hæmoptysis while on high altitudes.

The author does not regard it prudent to enter on a theory of the *modus operandi*. The agents are too numerous, and the physiological and chemical researches as to their influence on man and animals are insufficient. Thus, with regard to the rarefaction of the air, he alludes to three or four possibilities:—1. That, in order to inhale the same quantity of oxygen as in low elevations, the mechanical respiratory action must be increased. 2. That, without this increase, the quantity of oxygen inhaled is diminished, and that thus oxidation may be retarded. 3. That, in spite of the diminution in the quantity of oxygen inhaled, the oxidation may remain the same, or become even increased, by a greater "mobility of atoms," according to Drs. Frankland and Tyndall's experiments on combustion. Or 4. That a larger amount of ozone in the air of high elevations increases its oxidizing power.

Dr. Weber is inclined to attribute special importance to the dryness of the soil and air, to the presence of a large amount of ozone, and especially to the freeness of the air from foreign admixtures, mechanical, chemical, and organic, alluding to Pasteur's experiments on the air of different elevations. The fact that most consumptive invalids in the Swiss health-resorts feel better during winter than during summer, is likewise noticed, and the probable explanation is sought for in the greater intensity of the beneficial influences just mentioned during winter, viz., dryness of soil and air, large amount of ozone, comparative absence of foreign admixtures in the air. The author mentions that some of the influences at work in the high-level health-resorts exist also in some of the low-level, especially maritime, health resorts; and he does not wish to disparage the latter, which have their own advantages, and only requests the Fellows of the Society to give an impartial trial to the elevated health resorts in proper cases, and points to the probability of the great advantage which would arise to the consumptive soldiers of the Indian army, if they were to be sent for a sufficient length of time to the high regions of the Himalayas, instead of being invalided and sent home.

He then shortly refers to the localities suitable for treatment of cases of incipient phthisis on high ground on the Cordilleras, in Switzerland, and in Germany, the number of which would soon be multiplied and provided with the necessary comforts, if the plan advocated were more frequently adopted.

The following points are summed up for consideration.

1. That the elevated regions deserve greater attention in the management of consumptive tendencies and affections than they have hitherto recieved.
2. That they deserve this attention not only as summer, but even more so as winter, health-resorts.
3. That, without underrating the value of maritime and other low-level health-resorts, the elevated localities offer great advantages in cases of early consumption and tendency to consumption, in the disposition to catarrhal pneumonia, and the results of this disease, particularly the so-called tubercular (cheesey) deposits, and tubercular (pneumonic) infiltrations.
4. That in such cases the occurrence of fresh catarrhal and other acute intercurrent affections appears to be less frequent in high-level than in low-level health-resorts.
5. That the tendency to absorption and fibrous transformation or cicatrization of deposits is promoted, and the tendency to the breaking down of tissues and formation of cavities is counteracted in elevated health-resorts.
6. That the tendency to hæmoptysis is diminished, and not, as usually stated, increased, in elevated localities.

Dr. Weber concludes his paper with a tribute of gratitude to the late Dr. Archibald Smith, to whom he is indebted for much valuable information on medical climatology, especially with regard to elevated regions.

Dr. Symes Thompson said that the author had referred to various elevated health-resorts, especially in Mexico and in Peru. He believed there were others in South Africa that were even more eligible. In the colony of Natal, the Drakenberg range attains a height of 10,000 feet, and is crowned by table-land, on which there is free movement of air. The climate is dry, the sun brilliant, and the heat not excessive. He was acquainted with the cases of two phthisical patients who had gone to the Orange Free State, and in whom the results had been very satisfactory. He thought it would be hardly possible to determine, in any locality, the height at which phthisis did not exist; and he believed that the limit would have reference to the isothermal lines, as well as to the elevation. With reference to temperature, he rather feared the effect of extreme cold, and leaned towards a trial of elevated positions in the tropics. The long voyage to the Cape would often be extremely beneficial.

Dr. C. J. B. Williams expressed his sense of obligation to the author. He believed that the notion that cold was injurious to delicate people had taken deep root in the minds alike of the public and of the profession, and would not easily be removed. Our daily experience was that cold is hurtful, and moderate warmth useful. Statistics not at present in existence were needed for the determination of the question that had been raised. It would be necessary, also, to make a marked distinction between prevention and cure, between phthisis *in esse* and phthisis *in posse.* Although phthisis may not prevail in elevated regions, that does not prove that removal to them will cure the disease. Phthisical patients shrink from cold instinctively; and although to enforce out-door exercise is one of our best hygienic rules, the difficulty of enforcing it is that the phthisical feel that cold hurts them. He believed that great benefit might accrue in the way of prevention, but that in developed disease there would be much risk. Cold might easily be so applied as to derange the circulation, and to increase inflammatory action. In summer great benefit was often obtained by removal to a cooler region: but many patients went to Florida, or came to this country, from Canada, in order to avoid the rigors of the winter. The speaker concluded a lengthy address by a humorous description of the discomforts that might attend upon a winter residence in some of the places suggested.

Dr. Wilkes observed that the chief question was whether the benefit might not be due to diminished barometric pressure, and, if so, he considered the fact to be of immense importance. At present the profession knew nothing about the comparative effects of exertion or of quiescence of the lungs in retarding or accelerating phthisis. At present, all our systems are founded on giving more oxygen. One man tells a patient to expand his lungs; a second, to keep them quiet; a third, to expand them in moderation. He had come to the conclusion, long ago suggested by Dr. Barlow, that disease was developed in proportion to the activity of the organ, and was arrested by keeping the lung quiet. If, in an elevated position, where the barometric pressure was diminished, the patient used his lungs only half as much, and thence derived benefit, the fact would be the most important one in our knowledge, and would be worth all our remedies.

Dr. Drysdale asked how it was possible to account for the immunity from phthisis of the inhabitants of the western islands of Scotland and of Iceland, and suggested that it might be due to the absence of towns. If so, the immunity of the inhabitants of elevated regions might be of the same kind.

Dr. Weber replied to the observations of the several speakers.

OBSTETRICAL SOCIETY OF LONDON.

Dr. Graily Hewitt, President, in the Chair.

Mr. Spencer Wells exibited a Fibroid Outgrowth from the Fundus Uteri. The specimen, which weighed 34 lb. 10 oz., he had removed a few hours before the meeting, from a single woman aged thirty-six years. Eleven years before, half her lower jaw had been removed, with a fibrous tumor, by Mr. Pemberton, of Birmington. An abdominal tumor was discovered five years ago. It enlarged gradually, and she was twice in the Birmingham Hospital. During the last six months the tumor had increased rapidly, and she became very weak, and lost flesh. On admission to the Samaritan Hospital, a very large tumor was discovered, which evidently contained no cyst large enough to warrant tapping, but which did not feel so hard as a fibroid tumor of the uterus. No vascular murmur was audible in it, and it appeared to move quite independently of a uterous of normal size. When the tumor was exposed, Mr. Wells was surprised to find that it was not ovarian. It sprang from the posterior surface of the fundus uteri, by a short pedicle. This was secured temporarily by a clamp forceps (which was exhibited), and the tumor was cut away. Some bleeding spots, where adhesion had been separated, were secured by an acupressure needle, and the clamp was removed. Bleeding vessels were secured by harelip pins and twisted sutures, which also served to fix the bleeding surface to the abdominal wall by transfixion. Mr. Wells promised to make the result of the operation known at a future meeting. The specimen was referred to Dr. Braxton Hicks and Mr. Wells for report.

The President considered this an unusual case. Fibroid tumors of the uterous of large size were commonly very hard and dense, and their growth slow.

Mr. Worship exibited an Ovarian Cyst which he had removed at the post-mortem examination of a patient who had suffered for about ten years, succumbing, at last, after two days' illness, to an attack of peritonitis. About a twelvemonth prior to her death she had been tapped, and eleven gallons of viscid, chocolate-colored fluid drawn off. At the post-mortem, the cyst was found extensively adherent to the abdominal parietes.

Dr. Corey exhibited a lad, aged eleven years, on whom he had successfully performed tracheotomy for an attack of croup which had lasted fifty-seven hours, and in which death appeared imminent.

Dr. Meadows exhibited several instruments which he had received from Professor Cazarewitch, of Charkoff. Among them was a new hysterophor, which the author stated he had used with great success in cases of prolapsus uteri. Also two varieties of intra-uterine stems, made of vulcanite. One of these was tubular, and perforated so as to admit of the free escape of the uterine discharges; the other was of a spiral shape. The advantages claimed for these were that they retained their position well, and at the same time allowed the uterine discharges to find their way down by the spiral grooves. A uterine sound was also exhibited, at the handle end of which was an oval, concave plate of bright polished steel, which was intended to serve as a metroscope.

Dr. Rogers exhibited some drawings of the ovum of an early abortion, and gave particulars of the case. The patient from whose uterus it had been thrown off, had been married eight years without becoming pregnant, and had suffered much from dysmenorrhœa, which was ultimately relieved by dilatation and incision of the cervix. This proceeding was soon followed by pregnancy, and the ovum from which these drawings were taken was the result of the first conception. The decidua uteri was of a very irregular shape, with prominent cornua, and deeply depressed fundus. To one of the cornua was attached a bundle of papillary appendages, which had evidently occupied the uterine end of the Fallopian tube, an unusual circumstance, as the decidua seldom or never extends into the Fallopian tubes. The other cornua was much smaller and nipple-shaped, without appendages. The outer surface of the decidua was puckered, but smooth, and presented little of the shaggy appearance proper to its normal condition. It was remarkably thick and tough. The inner surface, on the contrary, which is generally smooth, was shaggy with lymphy flocculi. The decidua ovi was thickened and puckered, and irregularly attached to the decidua uteri. The manner in which the walls of the vascular sinuses are reflected over the dendritic villi of the chorion as first shown by the late Professor Goodsir, was very obvious in some thin sections of the decidual membrane. This patient subsequently again conceived, and was delivered at term of a living child.

Dr. Murry exhibited a small Intra-uterine Fibro[illegible] whcih he had removed by the single-wire écras[illegible]

Mr [illegible] Houghton read a paper on a case of Hæm[illegible] tal in forty minutes. The patient, aged 45, was eight months advanced in her sixteenth pregnancy, and while engaged in hanging bed-curtains slipped off the chair and fell to the ground. Profuse hæmorrhage from the vagina at once occurred; and before the author could reach her she had fainted and died. At the post-mortem examination the body generally was found well-nourished, but in an ex-sanguine condition; uterus healthy; membranes not ruptured; placenta attached near the fundus. No trace of coagulum or spot of blood was found in the uterus. The os was occupied by a plug of mucus, which was unstained by blood, nor was there any blood in the vagina. The only trace, indeed of blood that was found was a thin layer gluing the labia together. The author communicated the case to Dr. Greenhalgh, and that gentleman suggested that the hæmorrhage was probably due to a ruptured varix, and was not at all of uterine origin. And in this opinion the author agreed, although at the time of the autopsy the idea had not occurred to him. It was corroborated, moreover, by learning, as he subsequently did, that the patient had suffered from varicose veins of the thigh and vulva.

The President stated that he had seen, not long since, a case where a varix just within the vulva formed a considerable tumor during pregnancy, and which slight force would have ruptured. Once also, after delivery, he had seen considerable hæmorrhage from a varix which had been torn during the labour, and the source of the loss was at first by no means obvious.

Mr. Spencer Wells and Mr. Worship referred to cases in which they had seen death speedily follow the rupture of a varix in the leg. In Mr. Worship's case death followed within five minutes.

A paper was then read by Dr. James Wynne of Guatemala on an inveterate case of Ulcer of the Cervix Uteri cured by the application of Dr. Richardson's styptic colloid (communicated by Mr. Spencer Wells.) After giving a history of thecase, and describing the means of cure adopted during a period of three years, without avail — these means including careful attention to the general health, and the repeated application, locally, both of the milder caustics and the more powerful escharotics—the author stated, that after reading an account in one of Dr. Richardson's lectures of the properties of styptic colloid, he had thought it might prove useful in this case. He therefore made use of it. Its beneficial effect was manifest from the first, and at the expiration of the third week the ulcer, which had lasted for seven years, during three of which the patient was under his own care, was entirely healed, and the induration of the surrounding tissue sensibly diminished, The general health also began greatly to improve, and ultimately became quite re-established. Since then he had used the styptic colloid in several other cases, and they appeared to recover with more facility than under the ordinary mode of treatment, the duration of healing usually being abridged fully one-half. In conclusion, the author expressed his belief that the styptic colloid exercised a beneficial influence not only by excluding air from the ulcerated surface, but by protecting it from the secretions of the uterus, which were often very irritating in their nature. And from the fact that, although the whole effect of the remedy was expended upon the ulcerated surface, it having no power to attack deep-seated tissues, yet the indurated condition of the cervix entirely disappeared, he drew the inference that, in these cases, the induration is caused by the ulcer, and not the ulcer by the induration.

Dr. Murray gave particulars of some cases of uterine ulcer, in which he had successfully used the styptic colloid.

Mr. Spencer Wells said this paper had been sent to him by Mr. Corbet, our *chargé d'affaires* in Central America, with a note, saying that Dr. Wynne has long held a distinguished position in South America. Collodion had long been used with good results, at the Samaritan Hospital, in cases where the lips of the os uteri were excoriated by irritating secretions from the uterus. So that collodion itself was a good application, but it was probably made better by the addition of tannin.

Dr. Wynn Williams remarked, that while Mr. Wells had borne testimony to the good effects of collodion per se in abrasions of the cervix uteri, he could, in like manner, bear strong testimony to the great benefit to be derived from a spirituous solution of tannic acid (spirit of wine and tannic acid in equal parts.) Tannic acid acted not only as an astringent but as a powerful antiseptic, and therefore the more there was applied over and about the ulcer the better. He stated it as his belief that all the beneficial effects of the styptic colloid were simply due to the solution of tannic acid.

Mr. Collingwood stated, that when practising in Morocco, he had in some severe cases of ulceration of the cervix used, with the best effect, a powerful escharotic formed by saturating dried sulphate of zinc with strong sulphuric acid.

Dr. Routh thought that the ladies of the harem in Morocco must have uteri very different from the ladies of England to be benefited by such active treatment as that alluded to by the last speaker. Here, ulceration of the cervix was looked upon as only a concomitant of a congested or inflammatory state of the uterus or its membrane. Caustics like potassa fusa, when used, were to produce, as it were, a larger sore which, by discharging copiously, would relieve the congestion. Glycerine was applied in the same way, causing a copious flow of fluid. But usually the uterus was relieved of its congested state by local depletion, leeches, or scarifications, before caustics were used. In many cases depletion alone sufficed to cure the ulcer. If the uterine inflammation was confined to the mucous lining of the uterus, which, from the excoriating qualities of its secretion, produced ulceration of the os, it sufficed to cure the first affection, and the ulcer would get well with ordinary water ablutions.

The President spoke briefly in reference to the pathology of the so-called cases of ulceration of the cervix. There could be no doubt that the bright, vivid appearance of the lining of the cervix which is often associated with general congestion of the uterus, had been frequently mistaken for ulceration. The congestion itself, when causing uterine suffering, was, according to his own experience, associated in nine cases out of ten, with some noticeable and marked derangement in the shape of the uterus. Necessarily this view of the matter—and whether or not the case related by Dr. Wynne was of this kind it was impossible to say—would induce a careful scrutiny as to the efficacy of a particular application in the treatment of ulceration of the cervix uteri.

Dr. Rogers read a paper giving an account of a Case of Elephantine Clitoris, which he had successfully removed by the écraseur.

MEDICAL SOCIETY OF LONDON.

THE SYNTHESIS OF CATARACT.

We had not space to analyse Mr. Jabez Hogg's paper last month, and now supply the omission. The author thought that it was scarcely possible for any synthesis to be more perfect than that of of sugar cataract, and the important similarity which exists between the artificially induced and the natural disease is at once seen. Dr. Richardson had shown the universality of the subject. By saturating the blood with certain substances, as an alkali or sugar, a change is brought about in the tissues of the body; the eye shares in the derangement of function, nutrition is arrested, and saccharine or saline cataract ensues. Mr. Hogg proceeded to argue that in time appropriate medicines would be found for lenticular opacities. The author found that, upon burning the desiccated cataractous lens and viewing the spectrum, the sodium band seemed to be greatly intensified, as much as when metallic sodium is burnt; and this would seem to imply degeneration from excess of sodium salts. In Mr. Hogg's opinion, many forms of cataractous disease, besides those of the diabetic, are amenable to medical treatment; and if it be true that cataract is caused by a disordered state of the circulation, and at all times preceded by an inflammatory stage, then there cannot be a doubt of the propriety of attacking it in its earliest indications. Magendie long ago regarded the fifth nerve as very largely sharing in the nutrition of the eye, and thought that the loss of nutrition which takes place in cataract was owing to some abnormal state of this nerve, and led to the opacity; and that, therefore, medical treatment might be made available for the restoration of the lost nervous power. Bernard believes a change in the specific gravity of the fluids of the eye will produce opacity, and lays great stress upon the physiological effect of water in the organism; and these, with other observations of a similar kind, no doubt led to the practice of repeated evacuations of the aqueous, which Sir David Brewster and others thought might be the means of producing a more healthy secretion of fluid, and in this way remove opacities. Wardrop, half a century ago, tried paracentesis oculi to remove cloudiness in the aqueous, which he regarded as a symptom demanding speedy relief "for the purpose of diminishing irritation and lessening pain and tension of the eyeball." The whole question is, no doubt, one of important surgical and scientific inquiry, and well deserves to occupy the attention of those whose professional engagements and scientific pursuits may afford motive and opportunity for such studies.

The Secretary read a paper by Dr. Elliott of Hull, "On the Effects of Tobacco and Nicotine on the Goat." In experiments he had made, he found that an ounce of shag tobacco eaten from his hand by a goat had no effect. He then injected beneath the skin of the neck ten minims of nicotine. Violent symptoms were produced in thirty seconds: loss of power in limbs, hurried respiration, muscular tremor, pulse rose from 80 and 90 to 160, death momentarily expected; but in twenty hours after the operation the goat was quite well again. Dr. Elliott considers that the complete loss of power when sensation was unaffected, and the heart's action strong, has a practical bearing favoring the opinion of Professor Haughton, that nicotine is the best agent we possess for the treatment of tetanus and poisoning by strychnia. A second paper followed by Dr. Lowe of King's Lynn, "On a case of enormous Encephaloid Disease of Right Kidney."

Editorial.

"MODERN MEDICINE."

"Modern Medicine" has got into the lay quarterlies and into the daily press. And we are glad of it. The days are gone by, let us hope for ever, for medicine to be regarded as a mystery. The "art and mystery of the apothecary" lives only in the estimate of the vulgar and of the quackish, and Medicine is effective in proportion as it is simple, and commends itself to the approval of sensible people. The very fact that our leading quarterly journals devote an article to Modern medicine shows that Medicine is advancing, that the aims and methods of it admit of such a statement as shall be at once interesting and inteligible to educated people. We do not mean to encourage people to study their own diseases. This is an undertaking for which the acutest physician is unfitted as soon as he becomes a patient, and, except in regard to the most simple complaints, it is one in the pursuit of which most people will either do themselves harm or no good. What, however, we do advise people to study is health. Health is a difficult thing to define, but not so difficult to understand. Men, and women too, should be covetous of it, and should have clear ideas of what it consists in. They should wisely consider the habits and things that, without causing disease, seem to abate their amount of health; by which we mean their amount of strength, of interest in what they have to do, in things outside of themselves and other persons. These things and habits will be found often very near at hand, and it will be easy to trace the relation of them to something short of the full degrees of health. Late hours, scanty sleep, bad arrangements of meals, little close bedrooms, errors in the use of stimulants, either in the direction of excess or defect, too much work or too much pleasure, are the kind of influences which determine the health of men and women and their children, and the study of which is within the intelligence of all sensible people.

But now let us say a few words about modern Medicine as it appears to us, prefacing our observations with the admission that our lay contemporaries have ably represented the chief features of it, and that they write in a spirit of respect to Medicine which can only gratify those who have to practice it. It seems to us that, despite the fact that leading Lords can be got to preside at the dinners of homœopathic hospitals, there is yet a steady growth of intelligence amongst educated people as to the ends of Medicine, and the limits within which it is proper and wise to interfere with disease. We shall not dwell on the patent facts that scientific medical men have been of late interfering with disease much less than our forefathers did, that we have been leaving it very much more to itself, and making, or repeating, the discovery that really it is not such a deadly thing after all as was imagined. In the philosophical words of Dr. Alison, "The tendency of most diseases, both acute and chronic, to a spontaneous favorable termination has been so often and so distinctly observed, as to have suggested the doctrine of a *vis naturæ medicatrix*." The men who have most arrogantly or ignorantly disregarded, and sometimes denied, this tendency of disease, are the homœopaths, who have a "specific" for every disease, and who have done what little they could to perpetuate a blind ignorant belief in the powers of mere drugs. Your genuine globulist is still a believer in the "art and mystery of the apothecary;" and if he had his way we should get back into the slavish belief in mere physic which characterised the dark ages. Medicine proper uses medicine subordinately to a recognition of the great healing provision of the system. Quack medicine thinks there is something in drugs that cures as distinguished from something in the system which is supposed to kill. Vulgar minds in physic think that the tendency of disease is to death; whereas even in bad forms of disease, there is an attempt at something better, and in ordinary disease the decided tendency is in the direction of health. If scientific Medicine is open to the charge of having lately been too exclusively occupied in the study of mere disease, its nature and its manifestations, as perhaps it is,—it is able to reply that it has only been so with a view to understand what is wanted in, and what need there is for remedial measures.

Having indicated the great distinction between the scientific spirit in Medicine and the quackish spirit, and having admitted the substantial accuracy of the representation of modern Medicine given in the *Quarterly*, we shall conclude with two observations. One may be taken in illustration of what our contemporary says—that we now treat the patient rather than the disease. We try to find out the character of our patient as a patient; in other words, we try to ascertain his diathesis and his temperament, and we study his peculiar ailment in the light of these. The diathetic relations of disease are most important, and give us the clue to some of our best treatment, both preservative and remedial. Modern doctors think less of acute disease than the old physicians did. We have discovered that this is not a very serious thing *per se* Modern Medicine makes more of diathesis and degeneration of organs or tissues as determining the risk to life in any given attack. A shrewd physician, for example, would guage the gravity of whooping-cough very differently in two cases,—in one of which the child is healthy, and in the other rachitic. Similarly, he would distinguish between the risk of pneumonia in a healthy man and pneumonia in a patient with Bright's disease, or disease of the heart.

Our last remark is this: that though our remedies are less active or less perturbative than they used to be, they are not less efficient or numerous than they were. It is certain that drugs never did so much good and so little harm as they do now. The scepticism concerning the power of medicine is ill-timed in days when is admits of demonstration that the interval between fits of epilepsy may be extended to weeks instead of days, and months instead of weeks; that a large proportion of cases of tetanus have been remedially influenced by medicine; that the fatal tendency of phthisis, in a large number of cases, may be greatly diminished or practically overcome; that pain and other neuroses are more effectually opposed than ever before;—in days when the treatment of rheumatic fever is so enlarged and improved that a physician who has seen exceptionally much of it can say, as he did in our columns of the 1st of May, "In all my cases I have had only *one* instance of *original* heart-complication;" when the fatality of simple acute inflammations has been almost nullified; and, generally speaking, when medicine is a pleasure and a strength to the patient. We know that there is a fashion of scepticism abroad—a atalistic acquiescence in the actual;—but this is no temper for a physician who has to do with actual conditions that are very objectionable, and who has medicines and measures within his resources which have accomplished the above results. We repeat that there is scientific proof of the most important powers in medicines which, coupled with clearer notions of the benignant tendencies of disease, make Medicine a more noble and a more hopeful profession than it has ever yet been in the history of the world.

◆

ON PHYSIOLOGICAL PERIODICITY.

An interesting paper on the periodicity of the corporeal functions has recently been read in the Belgian Academy by M. Spring, and we give it in a condensed form for the benefit of our readers.

M. Spring first speaks of the blood, and observes that from the time of Cullen and Doubh it has been clearly recognised that the heart and arteries present two ascending and two descending periods in the twenty-four hours. The first period of ascent commences at 3 A. M., and attains its maximum at 9 A. M. The second commences at 1 P. M., and culminates at 5 or 6 P. M. at which time, in disease, an augmentation of the fever occurs. The second maximum is higher than the first. In health, the difference between the maximum and the minimum is from ten to twenty pulsations per minute. The respiration varies with the circulation, so that there are two or three more inspirations per minute at 9 A. M. and 6 P. M., than at 3 A. M., and 1 P. M.; and it is to be noticed that, as shown by Vierordt's experiments, the excretion of water and of carbonic acid is in inverse proportion to the number of inspirations. In like manner, exact thermometrical observations have shown that the temperature of the body is lowest at midnight, and attains a first maximum at from 8 to 10 A. M; whilst a second still more elevated temperature is reached towards 5 or 6 P. M. Some difference possibly exists in various latitudes, as Dr. W. Ogle's observations show that in London the cycle is single, the minimum being at 5 or 6 A. M., whilst the maximum occurs about 7 P. M. The limit of the variations is about three quarters of a degree cent. (3¼° Fahr., Ogle). It is noticeable that absoption takes place less actively in the descending periods of the pulse, respiration, and temperature, to which circumstance the more difficult digestibility of supper is attributable. Lastly, there is some, though still incomplete, evidence that the excrea,—as water, urea, uric acid, sulphates and phosphates—are discharged in proportions confirming the view of a double semidiurnal cycle.

Now to what is this remarkable periodicity due asks M. Spring. Some have referred it to the same category as the semidiurnal variations in the magnetic needle, and others to the similar variations observed in the ebb and flow of the tides; others, again, to the barometric changes of the air: but these phenomena scarcely bear on the subject in question. The needle, indeed, moves from the east to the west from 8 A. M. to 1 P. M., and from the west to the east from 1 P. M, to midnight; but it remains stationary through the night, and its revolution is rather diurnal than semidiurnal. The tides again, though semidiurnal, far from coinciding with the hours of the maxima of the human circulation, are systematically retarded some fifty minutes per diem. The oscillations of the barometric pressure of the air are more in accord with the periodical phenomena of man; but whilst the first maximum is about 9 A. M., the second does not occur till nearly 12 P. M., and this is the highest of the two. Hence we must look for some other cause of the observed phenomena; and the difference which exists between the two semidiurnal maxima obliges us, M. Spring holds, to admit a peculiar diurnal periodicity proper to the human body, and capable of being represented by a wave which has only one daily minimum and one maximum, this coinciding with the semidiurnal maximum of the evening, and rendering it greater than that of the morning. According to Martin, the turgescence of the body diminishes at night and increases in the morning. The increased tightness of boots and clothes in the evening is well known; and numerous measurements have shown that the chest diminishes three-quarters of an inch during sleep. Besides these variations occurring at certain hours, there exists a diurnal balance or compensatory action, the effect of which is that whenever, from any cause, the quantity of chemical work done in and by the blood is augumented during the day, it is spontaneously diminished in the night succeeding, and *vice versa*; so that the body returns again to its previous condition.

Sometimes, however, the compensation is imperfect; and then two days are required to make up for previous losses, and we obtain a bidiurnal periodicity, which was well shown in Voit and Bischoff's dog. Tridiurnal and septimanary periodical phenomena undoubtedly exist; and though little observed in health, they frequently become strongly pronounced in febrile disease.

M. Spring then proceeds to consider periodicity as exemplified in the nervous system; and points out that our social habits, though capable of great variation to suit circumstances of our lives, are yet essentially governed by the laws of innervation, — of which the most prominent are the law of exhaustion and the law of habit: the former influencing in particular the same time and duration of sleep, almost universally enjoyed during the night, and best during the early hours of the night; and the latter materially modefying many of our actions.

Lastly, he refers to *plastic* periodicity: the phenomena seen in the series of acts of development, growth, maturity, decline, and death,— which epochs mark the grand periods of individual life, and are accompanied and indicated by specific changes, as the passage of the omphalomesenteric to the placental circulation, and thence to independent life, the first and second dentition, &c. Independently of these grand periods, which occur only once in the life of the individual, there are others less protracted, which are repeated with wonderful regularity,— of which in animals the period of moulting, and in man the quadri-septimanary periodical ovulation of the female, are the most striking instances.

INSANITY WITHOUT DELUSIONS.

For many years past a conflict has been going on between the lawyers and the alienist physicians, in which the former, although not without a certain amount of excuse from the vagueness of much of their opponents' language, have been and are so completely in the wrong, that it is difficult to understand the pertinacity with which they adhere to their position. We refer to the legal doctrine that there is no proof of insanity without the existence of delusions. It is in vain that the greatest authorities, backed by enormous experience of mental diseases, have repeatedly declared that the mind may be thoroughly unhinged without the patient's showing any external evidence of intellectual delusion. With almost one consent the lawyers, both great and small, from the magnates who sit on the bench to the fledglings who pipe a spiteful treble in a well-known weekly review, incessantly repeat the parrot-cry, that doctors are mere "theorists," and that delusion is the only "practical" test which a lawyer can accept. If any proof were needed of the persistent bitterness with which this position is maintained, it is afforded by the howl which was lately raised for the execution of the wretched Bisgrove, who committed a murder in a paroxysm of epileptic fury. A very pleasing object, truly, in a moral point of view, is one of these literary spitfires in full blaze against the "theorists" who occasionally try to save a totally irresponsible patient from being hanged. Civilization moves slowly among lawyers, it is true; yet we should not be surprised if some of these scribes lived long enough to be considerably ashamed of the part they are now playing.

In the meantime, the very fact that every attempt of alienist physicians to show that insanity does not necessarily involve "delusion," such as lawyers recognize, is resisted so strongly, makes it the more necessary that we should thoroughly sift, and then consolidate, the evidence with which we hope to overthrow the mischievous distinction which the present administration of the law establishes. Towards this kind of study much helpful guidance may be obtained from a paper entitled "Insanity without Delusions," recently published by Dr. G. Fielding Blandford in the *Journal of Mental Science*, and now issued as a separate pamphlet. One circumstance which has helped to raise a prejudice against all theories ascribing particular impulsive criminal acts to a pathological cause is the unfortunate tendency to speak of such cases as "monomania," and no doubt there is some excuse for the incredulous hostility of lawyers when they are told to believe in an isolated insane tendency towards immorality or crime. Dr. Blandford argues well and forcibly, we think, against the idea that merely the moral or emotional qualities of the mind are depraved in any case. He fully admits that, after careful separation of all the cases which can be classified as mania, melancholia, or the like, there is a group of cases which peculiarly deserve the name of "impulsive" or "emotional" insanity, in which there is a total absence of all noticeable delusion. But he proceeds to point out that, although there may be no delusion, there are real defects of intellect, as well as obvious perversions of emotion, in all these cases, although we are not always able to connect the impulsive outburst of passion or crime directly with the intellectual aberration. To make the latter plain and undeniable should be the object of our examination when we are going to sign a certificate or to give evidence in a court of law. No doubt this is correct. The tendency of modern psychologists is to deny any separate entity to the emotions, and to disbelieve in special nervous centres of emotional impulse. Every emotion is probably the outcome of some process of nerve change, by which some ordinary act of bodily or of intellectual life is performed, and is rather the measure of the intensity with which such acts are effected than anything distinct and separate from them. And so in those cases where, at first sight, the only noticeable feature may be the uncontrollable impulse to crime or immorality, it is probable that there is nevertheless a perverted *idea*, either fixed or occurring suddenly to the patient, which really causes the emotional outburst. It is most important, then, in all these cases of "impulsive" insanity, that the medical witness should not content himself with proving the powerful character of the insane *emotion*, but should endeavor to demonstrate, what it is so much easier for lawyers and non-medical persons generally to appreciate, the *intellectual* defect which lies at the foundation of the patient's character, although it may seem to have no logical connexion with any particular insane act.

ON THE DEVELOPMENT OF HEAT IN INFLAMMATION.

The elevation of temperature that occurs in an inflamed part, as in a carbuncle, a whitlow, or a stye on the eyelid, is a phenomenon of such common occurrence, and is so obvious to the senses both of the patient and those who surround him, that it does not at first sight seem clear how any question can be raised on the subject. Nor, indeed, does it appear that any physiologist has disputed the fact, that an inflamed part is hotter than the adjoining or opposite regions; the point in dispute in regard to it has been, whether the increased heat is the result merely of an increased flow of blood through the vessels of the part, or whether it is attributable to increased metamorphosis of tissue and processes of oxidation taking place in the soft and succulent tissues undergoing the inflammatory process. The investigations of Mr. Simon, published in Holmes's System of Surgery, which were corroborated in all essential points by those of M. O. Weber, were supposed to have set the question at rest, and to have shown that the inflammatory process does involve a local production of heat: for the application of a thermo-electric needle showed, first, that the blood passing to an inflamed part is less warm than the focus of inflammation itself; secondly, that the venous blood returning from an inflamed part is warmer than the arterial blood supplying it, though less warm than the focus of inflammation; and lastly, that the venous blood returning from an inflamed limb is warmer than the corresponding current on the opposite side of the body.

The subject has again been taken up by M. M. Jacobson and Bernhardt, whose results are opposed to those of Simon and Weber, whilst they corroborate the original views of Hunter. Their investigations appear to have been undertaken with the object of determining whether the local development of heat observed after injuries is sufficiently intense to raise the temperature of the whole body to the degree observed in the so-called inflammatory or traumatic fever. The mode of experiment they adopted consisted in exciting pleurisy of one side, or general inflammation of the peritoneal cavity, by the injection of diluted acetic acid or caustic ammonia in rabbits; and, when inflammation was established, comparing the temperature of the serous sac affected with that of others, or with that of the blood of the right or left heart. In a preliminary series of experiments, it was found that great exactness was obtainable in ascertaining the temperature of internal parts by the insertion of a thermo-electric needle; and that, as a general rule, the pleural cavities were from about one-tenth to one-fifth of a degree cent. cooler than the peritoneal cavity, and from one-fifth to one-half of a degree cooler than the left heart. It was therefore clear that if a temperature of more than one half a degree cent. was present after inflammation had been set up, it could not be due to the blood-current, but must rise from some local and independent source of heat. But the results of experiment showed that, so far from any augmentation, there was a distinct depression of temperature in the inflamed side, amounting in one case, when the pleural sac was filled with fibrinous fluid, to as much as one-third of a degree cent. below that of the opposite pleura, about one-half of a degree less than that of the peritoneum, and more than one-half of a degree cooler than that of the left heart. Again in peritonitis, the temperature was less than that of the left heart by as much as two-thirds of a degree cent. and in one case it fell 1·1° cent. (equal to 2° Fahr), below that of the blood in the left heart.

The result of the experiment of these gentlemen is, therefore, to fully substantiate the remarks made by John Hunter; for we find in turning to his treatise "On Inflammation," when speaking of the heat in inflamed parts, he remarks that, "from all the observations I have made, I do not find that a local inflammation can increase the local heat above the natural heat of the animal; and when in parts whose natural heat is inferior to that which is at the source of the circulation, it does not rise so high." Some still more recent investigations by M. G. Laudien, on the temperature of wounds of the extremities, are equally in accord with those of John Hunter, and, like the proceeding, are, of course, in opposition to those of Simon and Weber: for he found, first, that the temperature of these parts in high inflammation never quite attained that of the internal organs; secondly, that although the temperature of the inflamed part generally exceeded that of the corresponding sound limb, it was only to a slight degree, and sometimes not at all; and, lastly, that the inflamed part was always lower in temperature than the arterial blood which was about to supply it. This subject seems to be one of importance, and to deserve attention at the hands of our experimental physiologists; and we should be glad to see some trustworthy observations recorded which would permit a definite opinion to be formed.

ORIGIN OF EPITHELIAL CANCER.

In a recent number of the *Centralblatt*, a paper on the Origin of Epithelial Cancer appears, written by M. Leontowitsch, in which he remarks that, with few exceptions, observers refer the origin of epithelial cancer, or cancroid, to the connective tissue. Recently, however, Thiersch and Billroth have denied this mode of origin, and hold that the epithelial elements play the most important part. The investigations of M. Leontowitsch were conducted on thirty-eight cases, operated on in the University of Charkow during the years 1865–66. His results were as follows: — The stratum Malpighii, at the site of the disease, was usually normal, and though sometimes more or less atrophied, at the point of transition of the skin into the mucous membrane it was always very thick. The sebaceous follicles were always hypertrophied, penetrated deeply into the skin, and contained well-developed nucleated cells. The sudoriparous follicles, on the other hand, were essentially unaltered. The muscles presented two kinds of alteration — 1st, atrophy due to the pressure of the young cells developing in the connective tissue; 2nd, thickning of particular fibres, which had lost their transverse, but retained their longitudinal striation. The refractive power of these fibres was increased, and, as in colloid disease, their borders had become strongly defined. All the three coats of the blood-vessels, and especially of the arteries, were thickened and condensed. The most remarkable appearances, however, were presented by the nerves. In these the neurilemma was thickened, and presented numerous connective-tissue cells; and in a few cases a differentiation of the latter into epithelium cells, which either invested the neuilemma, as a single layer, or formed cancroid masses united into groups. In the interior of the nerves, again, transverse section exhibited a proliferation of connective-tissue cells, the pressure of which has caused, in places, almost complete atrophy of the nerve-tubulee. An independent development of cancroid appears to take place in the muscles and fibrous tissue. The masses are deep-seated and isolated, consisting of young, and sometimes of old, dry, and shining epithelial cells, many of the former of which are in process of multiplication, and themselves ultimately differentiate into epithelial cells. the cells in the muscular fibres develop at the cost of the corpuscles of the muscles. In the subcutaneous fatty tissue the masses proceed from the proliferation of the cells of the stroma, and as they increase in number, gradually compress and produce atrophy of the fat-cells. M. Leontowitsch only once observed the development of cancroid in a lymphatic gland, and here also the epithelial elements originated in the connective-tissue corpuscles of the gland-stroma. The epithelium of the mucous membrane covering the lips was always hypertrophied, and the broad epithelial growths could be seen even with the naked eye to dip deeply into the submucous tissue. Microscopic examination showed that the papillæ of the mucous membrane were atrophied, and appeared between the new growths as small connective-tissue striæ. The new growths branch like roots at their deeper part, and are composed of cells exactly analogous to those covering the mucous membrane. The mucous follicles are enlarged, but retain their normal structure. The development of cancroid from the epithelial cells lining the mucous follicles was only noticed in one instance. It was observed to originate twice from the interior of a sweat-gland. In conclusion, M. Leontowitsch states that out of the thirty-eight cases examined, twenty unquestionably originated from connective tissue or its corresponding structures. In twelve cases it proceeded from the epithelial structure, and in six cases its origin could not be accurately ascertained. Hence he is of opinion that all the varieties of the connective tissue, as well as of epithelium, are capable of developing cancroid.

Medical Annotations.

"Ne quid nimis."

"HOG-CHOLERA."

Earl Cowper, in the House of Lords, last April, asked for information concerning the reported prevalence of hog-cholera in America. Earl de Grey, in reply, quoted from a letter of the British Consul at Buffalo, dated March 20th, to the effect that the malady was widely prevalent among American swine. The disease, it is stated, had been detected in a large drove which reached Buffalo on the 12th of March in transit for New York. About fifty of the drove were found to be infected; and several had been sold upon the spot before discovery was made. The flesh of the diseased hog, it was added, is totally unfit for human food.

It is to be regretted that Earl Cowper did not also ask if hog-cholera was prevalent in any part of Great Britain at the present moment. The disease is one of the most fatal epizootics from which swine have from time to time suffered in these islands; and our knowledge of the malady is far from satisfactory. It has been variously termed by different veterinary authorities, according to the view they have taken of the disease, erysipelas carbunculosum, gastro enteritis, anthrax, typhus, hog-cholera, &c. Mr. John Gamgee includes the disease among anthracoid affections. It is, apparently, characterized by signs of abdominal pain, diarrhœa, spasmodic breathing, ecchymoses over the whole body, and rapidity of progress. Mr. Gamgee states that "there is marked weakness of the hind quarters from the commencement of the attack. The animal staggers, its limbs cross each other, and at last are paralyzed and cannot move." Death is apt to occur in from three to six hours from the outset of the malady. Animals which recover may suffer long from paralysis of the hind legs or from inflammation of the joints. The appearances found after death are not uniform. The most constant are great congestion or ecchymosis of portions of the tract of mucuos membrane. In some cases the respiratory, in others the intestinal portion is the chief seat of pathological change, and at times the substance of the lungs and of the liver is deeply affected. Ulceration of the intestinal mucous membrane has been recorded; and, but for the rapidity of progress of the disorder, it might be thought that instances of the typhcid fever of swine, so graphically described by Dr. Wm. Budd, had been included amongst the examples of hog-cholera, properly so called, the symptoms agreeing in several important particulars.

Dr. Sutton, of Indiana, in an account of the epizootic, has related several instructive experiments showing the great contagiousness of the disease; and Dr. B. W. Richardson, reviewing Dr. Sutton's paper, pointed out the resemblance of the malady in several respects to scarlet fever; and suggested certain experiments with a view of testing the question (*Sanitary Review*, vol. iv., p. 241).

In the event of hog-cholera again becoming prevalent in this kingdom, the course of action, as deduced from previous experience, should be precisely what the country was taught by bitter experience in respect of the cattle plague. That course is at once to kill the sick animals, separate the healthy, disinfect piggeries, and exclude all new stock, except after a prolonged period of quarantine. No other method of action is at all likely to arrest the epizootic; and the lesson inculcated by the disastrous consequences of neglecting like advice at the time of the outbreak of the cattle plague must have been singulary ill learned if a similar disaster among our swine is needed to teach the same lesson as respects hog-cholera. Purchasers of pork should bear in mind that the ecchymotic marks on the flesh of swine killed by hog-cholera, or while suffering from the malady, are apt to be passed off by unprincipled butchers as bruises.

RELATIONS OF ELECTRICITY TO NERVOUS AND MUSCULAR ACTION.

An important paper, by Dr. Radcliffe, on the above subject, has lately been read before the Royal Society. Electricity in the form of a current has been almost universaly employed by Matteucci, Du Bois Reymond, Claude Bernard, Eckhardt, and other recent investigators of animal electricity, and the observed physiological effects have been ascribed to the action of currents only; but it appears from the investigations of Dr. Radcliffe that these views will require to be considerably modified. The substances of muscle and nerve are very bad conductors of electricity; in fact, the resistance of one inch of the sciatic nerve of a frog is more than seven times greater than that of the whole Atlantic cable; and the result of this very low conductibility is that, during the passage of a current, different portions of the current are in very different states of electric tension, or "potential," as it is now more frequently termed. It is shown in this paper, for the first time, that in a pair of frog's limbs prepared in the usual manner for showing the effects of the "direct" and "inverse" currents, the limb traversed by the inverse current manifests positive potential, which is a maximum at the foot, and gradually diminishes to zero at the point where the nerve joins the spinal cord: from this point the other limb exhibits gradually increasing negative potential, which again becomes a maximum at the foot. Moreover, if either terminal of the battery be placed in connection with the earth, the potential of the foot in connection with that terminal becomes zero, and gradually increases throughout the connected limbs, becoming a maximum at the other foot.

From a careful consideration of the various observed phenomena, it appears that in all cases a discharge of free electricity is the immediately precedent cause of muscular contraction, whether induced by the passage of a current, or otharwise; and this discharge is probably quite analagous to that of the electric organs of the gymnotus or torpedo—a discharge induced by nervous action, producing in the latter case merely a shock, while a similarly induced discharge produces contraction in the contractile tissue of a muscle.

It has been further shown by Dr. Radcliffe, that the action of electricity on a nerve, which has passed under the name of electrotonus, and has been supposed to be due to its vitality, is really due only to its very low conductibility; and may be equally well shown with a wet thread of silk or gutta percha, but not with a flaxen or hempen thread, which is too good a conductor.

Dr. Radcliffe has facilitated future investigation in animal electricity by devising a new system of electrodes, which may readily and with certainty be rendered free from polarization. These consist of platinum wires flattened at the end, and thickly coated with moist sculptor's clay; andmay, by a little manipulation, be rendered perfectly homogeneous. Experimenters well know that polarization of the electrodes has hitherto been the bane of all delicate electro-physiological experiments.

CREASOTE IN TYPHOID FEVER.

M. Pécholier, of Montpellier, has recently been conducting a series of interesting researches on the action of creasote in typhoid fever. Conceiving the disease to be one, *totius substantiæ*, depending on certain changes in the blood caused by the action of an organised ferment which draws from the blood the materials necessary for its nutrition and exhales those thrown off by its decomposition, M. Pècholier has been led to employ creasote as an intifermentive agent. Sixty patients at the Hôpital St. Eloi were chosen as the subjects of the experiment. Every day a draught, containing three drops of creasote, two of essence of lime, ninety grammes of water, and thirty grammes of orange-flower water, was administered to the patients. At the same time enemata were given, containing from three to five drops of creasote. M. Pécholier states, as the result of his experiments, that creasote employed in weak doses, either in draughts, injections, or in the form of vapor, at the outset of typhoid fever, acts powerfully in diminishing the intensity of the disease, and shortening its duration. M. Pècholier adds that the employment of the remedy as a prophylactic agent in schools, garrisons, hospitals, &c., during epidemics, would be of extreme efficacy.

THE PHYSIOLOGICAL ACTION OF PICROTOXIN.

M. Roeber has recently been engaged in experimenting on this substance, which was obtained as long ago as 1812 by M. Boullay from the well known seeds of the Cocculus indicus. The composition of picrotoxin is represented by the formula C_{20} H_{12} O_3, and its reaction is neutral. The conclusion at which M. Roeber arrives from his investigations is that picrotoxin is a powerful excitor of the medulla oblongata, or, perhaps, to express it more accurately, of all the nerve centres which are situated in the medulla oblongata. Hence follow violent and long-continued convulsions of the body generally, prolongation and ultimate stoppage of the cardiac beats, and acceleration of the respiration, which is finally arrested by cramp of the glottis and of the diaphragm. Though the drug does not appear to be at present available as a therapeutic agent, it is interesting as affording an example of the action of a poisonous substance on a particular section of the nervous system.

A VOYAGE WANTED.

It has sometimes been said that our hospitals for consumption have done little to advance the treatment of this disease, or to favor the recovery of the patients who repair to them. This may be true or not. We believe that the principal good they do is to supply patients with cod-liver oil and good food. And undoubtedly these are immense helps to recovery in the early stages of the disease. We wish to suggest another remedy for the good of young patients showing the first signs of tubercular degeneration. We know no objects more worthy of consideration and help, and recent experience goes to show that they are by no means to be given up as hopeless. Phthisis, in the conditions of comfort and wealth, may be kept at bay for many years, chiefly by care and hygienic measures. Can anything more be done to give poor consumptive patients, in the early and curative stage of the disease, a chance? If so, no charity could be purer or finer. To restore a promising youth, or the young father of young children, to vigor, after a little spitting of blood, or slight emaciation, is a consummation so desirable that it would never fail in England for want of money. It appears to us that a great means to this end might be supplied by a fine ship that would give such patients a long voyage under medical care of the best kind. Of course the cases would have to be carefully selected, but with this qualification the provision of such a ship would be a great means of cure and a distinct chance of life to many to whom Brompton and Victoria-park Hospitals are mere means of palliation and relief. Various forms of scrofulous disease other than phthisis should be so treated. We can only throw out the hint. But nowadays, when charity is so inventive, and useless hospitals are multiplying so fast, we make a suggestion that is worthy of the support of all charitable persons. A goodly ship that would take a shipload of delicate rather than diseased people for a voyage, that might establish their health for years, would be, at the very least, a fine experiment in hygiene and benevolence. Fresh sea air, with good diet and good medical conditions on board, would stave off indefinitely many a break-down in life.

GALL-STONES.

A committee recently appointed by the Medical Society of London to investigate the subject of Biliary Concretions, have drawn up a series of interrogatories for general circulation as follows, and is anxious to receive information in reply thereto:—

"1. Do you consider the formation of biliary concretions to be influenced in any way by age, sex, hereditary tendency, mental conditions, food, climate, and the like?

"2. Is the natural formation of a biliary concretion to be detected by the manifestation of any peculiar symptoms of dyspepsia?

"3. Do you consider it possible to determine symptoms of the presence of biliary concretions in the gall bladder, or the ducts of the liver?

4. "Can you narrate any cases of (*a*) biliary fistula, (*b*) communication between the biliary passages and other internal organs?

"5. What plan of treatment have you found efficacious for the general dyscrasia, and the relief of pain during the passage of biliary concretions?"

The committee also suggest that as many specimens as possible, as well as reports of cases may be forwarded. The reporter is Dr. Day. The committee should be able to gather together materials for a valuable clinical history of gall-stones.

A CURIOUS HOSPITAL RULE.

From a paragraph in the *Liverpool Albion* we learn that, at the Birkenhead Borough Hospital, a regulation of the committee is in force ordering that no one who has inflicted injury upon himself while under the influence of drink, should be admitted into the hospital. It appears that a man, having made an attempt upon his own life, was taken to the hospital in due course, when the house-surgeon, in obedience to the order we have referred to, requested his immediate removal by the police; and, on this being refused, proceeded, with the help of the porter, to eject the unfortunate patient, who was in a very precarious condition. Eventually the patient was seen by the police surgeon, and sent to the workhouse hospital; and the stipendiary magistrate, to whom the case was mentioned, very justly remarked that "it was a most extraordinary thing that the committee should have made so absurd a rule."

Committees of hospitals do occasionally make most absurd and impracticable regulations. Thus, not many years ago, the committee of a London hospital resolved that no dead body should be brought into the hospital. This of course raised the practical difficulty that it was impossible to decide as to the absolute death of a sufferer until he had been medically examined, and that the house-surgeon could hardly make his examination in the street. As it happened, the first case which occurred settled the question; for a gentleman who had blown out his brains in a cab was brought in, and being found to have a large sum of money upon his body, it was duly received and tended, and the regulation was thenceforth disregarded. Supposing the unfortunate suicide at Birkenhead had been a well-known millionaire instead of a vulgar wife-beater, we imagine that a more lenient view might have been taken of his case; and certainly the sooner, in the name of humanity, the law is rescinded the better.

REVEREND AMATEUR DOCTORS.

What a pity it is that reverend gentlemen do not mind their own business. When they do so, they come in for an amount of reverence which to say the least, is as much as they deserve; but when they try their hand at treating bodily diseases, they generally appear to very little advantage. The chances are ten to one that they practise some form of nonsensical quackery. A reverend gentleman, Mr. Howell, independent minister of Wells, treated John Sandell medically. Mr. Sandell was seventy-eight years old, and labored under great difficulty of breathing. Mr. Howell volunteered to prescribe for him, and gave him globules of aconite and nux vomica, then spongia and nux vomica, and then—Mr. Sandell died. Far be it from us to think that Mr. Howell killed Mr. Sandell by nux vomica or even by sponge; but it is not quite certain that he did not do him much harm by preventing deceased sending for a medical man, and by making him think that he was being medically treated. We have no disposition to be very hard on men like Mr. Howell so long as they only take their own globules; but when they go on treating others with fatal inflammation of the lung till they die, then we must be excused for saying that they display the gravest ignorance at once of disease and of their duty. Mr. Howell must feel very responsible in having acted as physician in a case so serious in its nature and termination. We hope for the future that he will restrict himself to theology, and practise homœopathy only upon himself.

A MODERN HISTORIAN ON THE SOCIAL EVIL.

Mr. Lecky, in writing a History of European Morals, has dwelt at much length upon the position of women. The subject is one of delicacy, and, on that account, generally avoided by writers; but he has had the courage to grapple with it. He is discussing the question of marriage in relation to the natural duties devolving upon parents, and the preservation of domestic purity; and he adds, "The family is the centre and the archtype of the State, and the happiness and goodness of society are always in a very great measure dependent upon the purity of domestic life."

Under these circumstances, he goes on to say,—"There has arisen in society a figure which is essentially the most mournful, and in some respects the most awful, upon which the eye of the moralist could dwell. That unhappy being whose very name is a shame to speak, who is scorned and insulted as the vilest of her sex, and doomed, for the most part, to disease and abject wretchedness and an early death, appears in every age as the perpetual symbol of the degradation and sinfulness of man. Herself the supreme type of vice, she is ultimately the most efficient guardian of virtue........On that one degraded and ignoble form are concentrated the passions that might have filled the world with shame. She remains, while creeds and civilizations rise and and fall, the eternal priestess of humanity, blasted for the sins of the people......The existence in England of unhappy women, numbering not less than 50,000, shows sufficiently what an appalling amount of moral evil is festering uncontrolled, undiscussed, and unalleviated, under the fair face of a decorous society. In the eyes of every physician—and, indeed, in the eyes of most Continental writers who have adverted to the subject, —no other feature of English life appears so infamous as the fact that an epidemic, which is one of the most dreadful now existing among mankind, which communicates itself from the guilty husband to the innocent wife, and even transmits its taint to her offspring, and which the experience of other nations conclusively proves may be vastly diminished, should be suffered to rage unchecked because the Legislature refuses to take official cognizance of its existence, or proper sanitary measures for its repression."

In some footnotes Mr. Lecky alludes to Parent-Duchâtelet's work, and a pamphlet by Dr. Vintras; and he remarks that some measures have been taken in a few garrison towns; but the moral sentiment of the community would be shocked if Liverpool were treated on the same principles as Portsmouth. He follows up the subject from the moral and religious points of view, but into these we have not space to enter.

News Items, Medical Facts, &c.

A BUTCHER at Hull was lately detected in removing from a knacker's premises a sackful of horseflesh, which he intended to "work up" into "polonies." The knacker stated that he held a commission to supply the "polony" man with three dead horses per week. The carrion-purchaser has been sent to take his trial for his vile traffic.

YELLOW FEVER IN SOUTH AMERICA.—Official notice has been sent to the Collectors of Customs that yellow fever prevails at all the ports of the departments of Moquega and Arequipa, with the exception of Arica, in Peru. The same fearful disease is also reported to be very prevalent at Caraccas, in Venezuela.

PUBLISHED BY
WM. C. HERALD, Agent. 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, JR., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 9. NEW YORK, SEPTEMBER, 1869.

Lectures
ON THE
PHYSIOLOGY AND PATHOLOGY OF THE NERVOUS SYSTEM;
AND ON THE
TREATMENT OF ORGANIC NERVOUS AFFECTIONS.

BY C. E. BROWN-SEQUARD, M.D., F.R.S.,
Fellow of the Royal College of Physicians of London, Member of the National Academy of Sciences (U. S.). Etc.

LECTURE II.—PART IV.

ON ORGANIC AFFECTIONS AND INJURIES OF THE SPINAL CORD PRODUCING SOME OF THE SYMPTOMS OF SPINAL HEMIPLEGIA.

Various kinds of paralysis from diseases of the spinal cord—Paralysis of one arm—Paralysis of the two limbs on one side, with or without hyperæsthesia on the same side, and anæsthesia on the other side—Paralysis of voluntary movement, wlth vaso-mortor paralysis in the limbs or in the eye aud face—paralysis of one arm and anæsthesia of the other arm or of the other leg—Other kinds of combination of symptoms—Double spinal hemiplegia.

Reviewing now most of the cases I know of partial or incomplete, and of complicated, cases of spinal hemiplegia caused by an organic affection of, or an injnry to, the spinal cord, I find, and will show, that they present a great variety of symptoms as regards the parts attacked with paralysis of movements, anæsthesia, hyperæsthesia, vaso-motor paralysis, &c. I will first give a short account of cases of partial or incomplete spinal hemiplegia, and then relate briefly also some cases of complicated or double spinal hemiplegia.

I. *Cases of alteration of a small part of one of the lateral halves of the spinal cord in the cervical region.*—The effects of such an alteration may produce paralysis of movement only in one arm or in both limbs on one side, but more so in either the upper or the lower one. It may produce anæsthesia in the opposite arm or in both arms; it may produce anæsthesia in the opposite leg and not in the arm; it may produce hyperæsthesia and elevation of temperature in one or two limbs on the same side; it may also produce all the symptoms of a division of the cervical sympathetic nerve in the neck. Besides, there may be a coexistence of any set of two or three of the above symptoms. I will now briefly relate a number of examples to show how great is the variety of the symptoms that can be observed in organic alterations of a lateral half of the spinal marrow.

1st. *Paralysis of one arm only in cases of alteration in some parts of the spinal cord.*—The most decisive case of that kind I know of, has been put on record by a French practitioner, Dr. Laurence. I only give a very short account of the case.

CASE 20. A young, consumptive man was attacked with paralysis of movement, limited to the *right* upper limb. The paralysis was complete, but there was no diminution of feeling in that limb. He died, and the autopsy showed a tubercle, the size of a small walnut, between the dura mater and the bone on the *right* side, pressing upon the *right* lateral half of the cervical enlargement of the spinal cord, especially against the anterior column, which was softened in an extent of about an inch and a half.

It is to be regretted that the author has not mentioned the state of sensibility in the left limbs, where most likely there was some degree of anæsthesia (especially in the lower one). The case is, nevertheless, a decisive one to show that the upper extremity may be alone paralyzed from an alteration of the antero-lateral column of the spinal cord in the cervical region. This case, as well as others to be mentioned hereafter, shows that, in some parts at least of the cervical region of the spinal cord, the nerves of motion for the upper limbs are more superficial than those for the lower extremities.

2nd. *Paralysis of both limbs on one side, without other decided symptoms of spinal hemiplegia, in cases of alteration in some parts of the spinal cords.*—I will give a few examples of this kind of incomplete spinal hemiplegia to show that according to the seat and extent of the alteration in the spinal cord there are some differences in creased sensibility to touch, to tickling and to painful impressions in these parts, especially the lower one. In the left limbs, on the contrary, there was an evident but not considerable, anæsthesia, as regards touch, tickling, and painful impressions.

The diagnosis I came to in this case was that the concussion (which had produced neither a fracture nor a dislocation of the vertebræ) had been the cause of an effusion of blood in a small part of the right side of the spinal cord in the cervical region, above the place of decussation of the conductors of sensitive impressions of the upper extremities. As in that case there was no marked differences between the two sides of the face and the two eyes, it is evident that the seat of the lesion was not, as in the case of Andral, which I have mentioned (Case 26), in the part of the spinal cord where pass the nerve-fibres belonging to the cervical sympathetic nerve.

II. *Cases in which an alteration occupies a part of both sides of the spinal cord, but more so in one than in the other.*—Probably cases of this kind are more numerous than cases in which an alteration is entirely confined to one-half of the cord; but they do not offer the great variety of symptoms which we find in these last cases. I will only speak of three different sets of symptoms produced by an organic affection of, or an injury to, both sides of the spinal cord.

1st. *Paralysis of movement existing chiefly in the limbs of one side, with or without impairment of sensibility.*—I will give three cases of this kind, the first of which has been reported by Dr. R. Bright.

Case 29.—A young man, after pain and stiffness in the neck, had his head bent down, forward, with almost complete hemiplegia on the *right* side. After some improvement and a relapse, the *left* leg was found much affected and always cold to the touch. He became unable to walk without assistance, complaining that his limbs felt asleep; but they retained their sensation. He was attacked with erysipelas, which extended over his face and scalp; he became quite unable to move any part of his body, passing his urine and fæces in bed, and soon died.—No affection of brain. Spinal cord congested in one or two spots. Processus dentatus enlarged and displaced, pressing upon the spinal cord.

Unfortunately Dr. Bright does not say what part of the cord was compressed. The symptoms, however, show that the placement of the processus dentatus must have been such as to make it press on the right side of the spinal cord, but at first, only, as after a time it must have pressed also on the left side. Evidently the antero-lateral parts of the spinal marrow were the only parts injured, as sensibility seemed to persist.

I come now to the case of Dr. Todd, which he and other physicians have considered as being a type of spinal hemiplegia. Persons who have paid some attention to the facts and views I have brought forward in this and in the preceding lecture will easily find out that it does not deserve such a position. Owing to the value of the case, I give it almost completely.

Case 30.—M. C——, aged sixteen, admitted Nov. 18th, 1849. Had always been delicate. On admission, she complained of pain in the head and some stiffness in the neck. There was complete paralysis of the left arm, with flaccidity and some wasting of the muscles. In walking she dragged her left leg with a sweeping movement. She could move that limb up and down as she lay in bed, but she was unable to hold it up from the bed. Sensibility was impaired, although she retained a considerable amount of feeling on the paralyzed side. Her head was drawn to the right side, and the face looked forward and rather to the left. There was a very rigid state of the right sterno-mastoid muscle. On the left side, the neck presented considerable deep-seated swelling in the region of the uppermost cervical vertebræ. The palsy of the arm appears to have come on gradually after the appearance of the swelling, and the weakness of the leg appeared after that of the arm. On the 11th of December, it was found that she had lost the use of the left leg completely. She complained also of twitching on the left side of her body. The intercostal and abdominal muscles of the left side remained perfectly motionless during respiration. The umbilicus at each expiration was distinctly drawn to the right side. Sensibility was not more impaired in the paralyzed limbs than on her admission. No difference could be observed between the two sides as regards temperature. On the 12th, the right arm was found to be partially paralyzed; she was just able to flex and extend the fingers slowly and feebly. The power of the sphincters was lost, and the fæces and urine were passed involuntarily. The action of the diaphragm on inspiration was so feeble that it could scarcely be felt in its descent. No contraction could be detected in the intercostal muscles of the left side. On the 13th, sensation was more impaired in the left arm and leg, and she complained of a want of power over the right leg. On the 14th, the whole of the left side below the neck and also the right arm were completely paralyzed. Voluntary power in the right leg almost entirely lost. Respiration feebly performed by the right side of the diaphragm, then only by the sterno-mastoid, and at last she died.—The disease consisted chiefly in an enlargement of the odontoid process of the second vertebræ. This extended backwards, wearing through the dura mater; and it was covered on the left side by a fibro-cartilaginous growth, which compressed and flattened the spinal cord on the left of the median fissure. The compression of the cord was so great, that it seemed as if a large portion of the nervous matter had been pushed from the left to the right side, and partly upwards; and the cord was swollen both above and to the right of the compressed part. The nervous matter on the left side was soft and slightly discolored, as from small ecchymoses; that on the right of the fissure was very soft and diffluent.

This important case deserves at least some remarks. There are two points in it which appear to be in such absolute contradiction with the principal of the characteristic features of spinal hemiplegia that I must call attention to them. I mean the impairment of sensibility in the paralyzed (the left side), and the absence of anæsthesia in the opposite side, if we take it for granted that the lack of mention of the condition of sensibility in this last side (the right) means that there was no diminution of that faculty. I think that no one who has paid some attention to the facts and reasonings I have so much insisted upon in this and the preceding lecture can have the least doubt that, if, in Dr. Todd's patient, the injury was ever limited to the left side of the spinal cord, a diminution of sensibility, however slight, cannot then have existed in the left limbs. I think also that there cannot be a doubt that, if not only the anterior and lateral columns, but also the grey matter of the left side of the cord, were injured, there must have been at least some anæsthesia in the right limbs.

There is one way to reconcile this case with the teachings of experimental physiology and clinical medicine: it is in admitting that there already was at the time of the admission of the patient at King's College Hospital a pressure exerted by the odontoid process, not only on the antero-lateral column of the left side, but also on the grey matter of the two sides of the cord; and that the recognized anæsthesia in the left limbs was due to the alteration of the grey matter in the right side, while the alteration of that substance on the left side produced an unrecognized, or at least not mentioned, anæsthesia.

Whether this explanation of the symptoms of this case be the right one or not, I will leave undecided, as the autopsy having been made only when the disease had progressed considerably, it is impossible to reach a positive conclusion; but one thing is certain,—it is that this case cannot in any way serve, as Dr. Todd thought, as a type of spinal hemiplegia. Far from being a type, it is not even a case of pure or simple spinal hemiplegia, either complete or incomplete. It differs essentially from incomplete spinal hemiplegia in the coexistence of anæsthesia and paralysis in the limbs on the side injured in the cord; and it differs radically, also, from complete spinal hemiplegia by the absence of (noted) anæsthesia in the limbs on the opposite side to that of the injury.

In the following case we find, as in the preceding one, the absence of mention of anæsthesia, or, at any rate, of the state of sensibility, in one side of the body; but the symptoms are clear enough to show that the spinal cord was affected on both sides, and that there was what should be called double spinal hemiplegia. The case, which I bridge considerably, was published by Mr. Solly.

Case 31.—A plasterer fell from a scaffolding, and lost consciousness. When he recovered he complained of his shoulder and neck; the *right* side was paralyzed, and there was loss of sensation, as well as motion, in the arm, as high as the elbow. A little later he complained of numbness in the *right* side; he had no power over the bladder, and had but little in his *left* leg. The next day, much pain in all his limbs; he had a little more sensation in his *right* arm, but no motion; face flushed; no power over the bladder; *left* hand and arm very cold. In the evening: pupils scarcely sensible to light; more feeling in his *right* hand, and is said to have a little motion in his *right* leg, but the house-surgeon did not observe it. He died in the night.—The right laminæ of the arches of the fourth and fifth cervical vertebræ were fractured; there was hæmorrhage into the substance of the cord to considerable extent on the *right* side, more slightly on the *left*, but no breach of surface; the effused blood on the *right* side occupied the whole of the grey matter and nearly half of the white, but not reaching the surface. On the *left* side the deposit was at least one-fourth that on the *right*.

Had sensibility been the object of a careful examination in this case it would have been found almost completely, if not entirely, lost in the left side. There was considerable alteration of the right side of the spinal cord at a level and in a part where the effect must have been paralysis of movement in the two right limbs, anæsthesia of a portion of the right arm, and anæsthesia also of the two left limbs. Of these symptoms the first two have been reported, while the third one, if observed, has not been mentioned. There was also a relatively slight alteration in the left half of the cord, which had produced the paralysis of the left lower limb, and must have had some diminishing influence on the sensibility of both extremities of the right side. In other words, this was a case of double spinal hemiplegia, and would have offered, if the symptoms had been thoroughly studied, these interesting features:

In the right side.	*In the left side.*
Almost complete loss of motion.	Slight loss of motion.
Anæsthesia, not in a very great degree.	Almost complete anæsthesia.

2nd. *Paralysis in both legs and one arm with hyperæsthesia.*—I know of but one case of this kind. We owe it to Mr. T. Bryant. I only give a short analysis of it.

Case 32.—A man fell with a sack of coals upon him. He was at once paralyzed of both legs and of the left arm. He at first had anæsthesia in several parts, but complete only in the left arm. After a few hours sensibility returned everywhere, and soon after hyperæsthesia appeared, and became so excessive that the skin could not be touched without causing pain, especially in the right arm. He continued to have power to move the right arm, and died thirty hours after the accident. Opposite the fifth cervical vertebra the substance of the cord was contused. There was found ecchymosis of the posterior horn of grey matter on the *left* side and of the adjacent part of the lateral and posterior columns. There was also ecchymosis in the *right* posterior column, and in the *right* anterior cornua of the grey substance. The grey matter generally was hyperæmic.

I will only say now about this case (which is most important in a physiological point of view) that the lesion on the left side of the cord was not extensive enough, transversely, to produce anæsthesia in the opposite side, and that the hyperæsthesia in the four limbs was due to the ecchymosis in the two posterior columns. The fact that a lesion of the right side of the spinal cord (an ecchymosis in the anterior cornua) in the cervical region produced a paralysis of motion in the lower extremity and not in the upper is quite in harmony with the teaching of experiments on animals and with other pathological cases, which show that the conductors for the voluntary movements of the arm are there superficial and located chiefly in the white lateral column, while those serving to the leg are deeper seated.

3rd. *Considerable paralysis with hyperæsthesia in one side, and slighter paralysis with anæsthesia in the other side.*—Only one case of this kind exists, so far as I know. We owe it to Mr. South, whose account I give, much shortened.

Case 33.—A man fell on a staircase. His limbs were paralyzed, except the left lower one, which had some power of motion. Sensibility of the whole *right* half of the body was morbidly exaggerated, while that of the *left* half completely destroyed, except in the abdomen, where some feeling existed. The third day there was less hyperæsthesia in the *right* side, and a slight return of feeling in the *left* side. On the fifth day he moved the left arm a little, and had more power in the left leg. He sank rapidly, and died in the night.—The atlas, odontoid process, and body of the fifth cervical vertebra were broken, but had not pressed on the spinal cord. A central lodge was found in this organ, containing a little blood. The substance of the cord was broken down and disorganized in front of the fifth cervical vertebra.

Unfortunately the exact position of that "central lodge" and the extent of the "disorganization" of the tissue of the cord are not given. There cannot be a doubt in the mind of those who have read my first lecture and the beginning of this one, that the principal seat of the lesion was in the right half of the cord, producing the three decisive symptoms of spinal hemiplegia—namely, paralysis and hyperæsthesia on the side of the lesion (the right), and anæsthesia in the opposite (left) side. There was also in this case a lesion in the left half of the cord producing paralysis of motion chiefly in the left arm, and having no influence on sensibility on account of its location.

◆

Clinical Lecture
ON
PROLAPSUS UTERI AND ITS TREATMENT.

Delivered at University College Hospital,

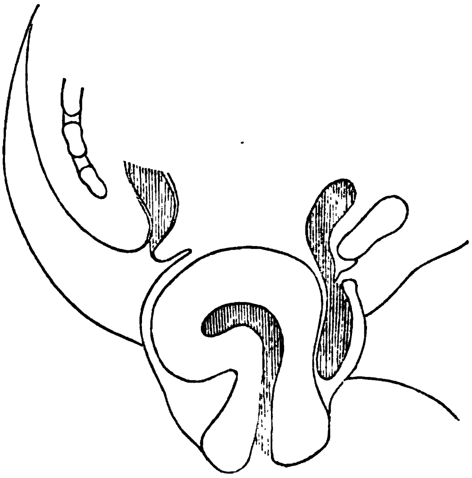
By Graily Hewitt, M.D.,
Professor of Midwifery and Diseases of Women, University College.

Gentlemen,—I propose to speak to-day of the prolapse of the uterus. The subject is an extensive one, and it is one concerning which it is very important that, both as regards pathology and treatment, you should possess definite and reliable principles. Some years ago, every case in which there was a substance protruding from the vulva was considered to be a case of prolapsus uteri. As science advanced, knowledge became more discriminating, and we now know that various conditions are present in such cases. Sometimes it is a portion of the bladder only which protrudes, sometimes the uterus, and sometimes the posterior part of the vagina; not to speak of instances in which the substance protruding consists of something further than this, such as a polypus connected with the os uteri.

A case now under treatment in the hospital will enable us to study the subject in its clinical and practical relations.

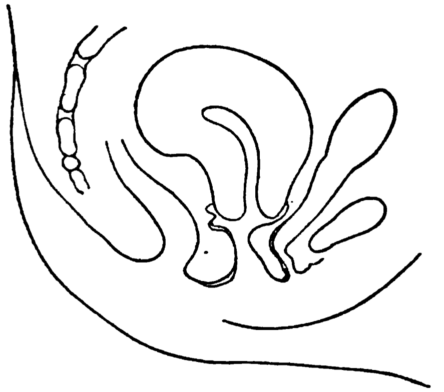
Mrs. H——, aged forty-two, has had two children, the last nineteen years before she came under observation. For some years this patient has suffered from one of the forms of prolapsus. The nature of the prolapsus in this case will be understood by reference to this drawing (Fig. I), which was taken when the patient first came under observation in June, 1868. You will perceive that the whole uterus is outside the vulva, and that the organ is considerably hypertrophied, measuring some three or four times the normal size of the uterus. Further, you will perceive that there is another condition of the uterus which is interesting and important—namely, the retroflection of the organ. The uterus is not only displaced to such an extent that it is quite outside the vulva, but it is also markedly introflexed. These points were made out at the time of the examination by the use of the finger only, and they were confirmed by the use of the sound, by which the direction and length of the canal were ascertained. The bladder also is seen to be displaced. Attached to the uterus as it is naturally, the bladder shares in the movements of that organ, and is thus drawn downwards and protrudes at the vulva. The tumor thus formed, larger than the fist in size, presented a somewhat smooth appearance, and was quite dry, the dryness, of course, resulting from the long exposure of the mucous membrane to the atmosphere. A further condition to which I may call your attention is the enormous distension of the vagina in this case. The vagina under these circumstances is necessarily inverted, and it is distended to an extent corresponding with the size of the uterus. The patient informed me that she could push the tumor back, although only with considerable difficulty; but the moment she assumed the erect posture the tumor came down again. Defecation was attended also with a protrusion of the tumor and very considerable pain. I need not say that the condition of the patient was most distressing: locomotion was painful to her, and she was prevented from doing many things which her condition in other respects would have perfectly permitted.

Fig. 1.



Let us consider for a moment how it was that this state of affairs came about. I believe that this form of prolapse of the uterus is, as a rule, consequent upon laceration of the vulva at the posterior commissure. The support which should be rendered by the perineum is taken away, and there occurs a descent of the uterus in the pelvis to a slight extent. I believe that in this instance the first event was retroversion of the uterus, followed by a slight descent of the uterus in the pelvis. Here is a drawing (Fig. 2) which represents this, the first stage of this condition. It will be perceived that the point which first gives way, which first descends in the pelvis, is the cul-de-sac behind the cervix-uteri—in other words, the top of the vagina. It falls lower in the pelvis than it was before, and comes down in consequence of the uterus pressing upon that point. In a further stage of this condition, on making an examination with the finger, you will find the os uteri close to the vulva, the cul-de-sac behind that os uteri being quite low down. Still later, the uterus falls altogether outside the vulva, and under such circumstances it falls in a state of retroflection.

Fig. 2.



To sum up, then, I believe that in such a case as the one before us the laceration of the perineum is the starting-point; that the uterus then begins to descend, and it descends at the same time that it becomes retroverted; and in an extreme case the uterus falls altogether outside the vulva.

In the next place, I desire to call your attention to the principles which should guide us in the management of cases of this kind—cases of pure prolapse of the uterus, accompanied, as they generally are, by a tendency to retroversion.

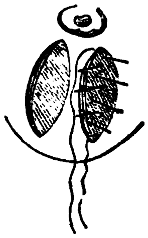
The treatment of these cases has been conducted in various methods at different times. Formerly the practice consisted in introducting a large globular pessary, the size of which was adapted to the case. The globe of wood, or metal, or some other convenient material, was placed in the vagina, and was kept there by the contraction of the sphincter vaginæ. It thus retained the uterus in its place, and at all events prevented the prolapsus. A variety of other inventions have been used at different times since the globular pessary. Some of them have carried out the principle to which I am about to call your attention, and which I consider so valuable; others have egregiously failed in carrying out that principle. The principle to which I allude is the maintenance of the upper part of the vagina in its proper position in the pelvis. An attentive consideration of the facts relating to the fixation of the uterus in the pelvis leads us to the conclusion that if the posterior cul-de-sac of the vagina be kept in its proper position in the pelvis, it is almost impossible for any considerable displacement of the uterus to occur. This is the most movable point, and it is the point which does become moved in the beginning of prolapsus and if you can succeed in keeping this part of the vagina in its proper position in the pelvis, you cure the disorder.

The method which I have found most convenient in carrying out this principle is the application of an oval ring, which is adapted, as regards its length to the length of the vagina, and, as regards its width to the width of the vagina; and which is kept in its place by being made of a sufficient width below to prevent its escape from the vulvar aperture. When these conditions are complied with, the difficulties of the case are at an end. These instruments we employ largely in the out-patients' room in the treatment of retroflexion; they somewhat resemble in form Hodge's pessary, but the material of which they are made —copper wire and gutta percha—allows of a ready and perfect adaptation of the instrument to the particular case.

In attempting to apply these principles of treatment, we meet with difficulties in certain instances. The most remarkable example of this difficulty is afforded by such cases as that described at the commencement of this lecture—where the vagina is enormously dilated—where the perineum is deficient in its floor, and the uterus completely prolapsed. In such a case as this the application of the oval ring pessary is hardly likely to be attended with beneficial results. And why so? Because the vagina has become so excessively dilated by the long existence of the disease, has become so much hypertrophied by the continual friction to which the parts have been subjected, and the condition of the parts is so very different from that which they present naturally, that we could hope very little from the use of the ring pessary. It would be necessary to employ a very large one in order that it might be retained *in situ* at all, and the use of a very large ring would only perpetuate the distention of the vagina. Nothing, in fact, short of an operation would be likely to give a satisfactory result in such a case as this.

We come, then, to the consideration of the question—what operation? An operation has been frequently practised for the relief of such cases, consisting in a sewing up—for it is nothing less—of the aperture of the vulva so as to reduce it to its natural dimensions. The operation is known as the operation for ruptured perineum, and it consists in laying bare the surfaces on each side and bringing them together. You perceive, however, how much the operation fails to accomplish the object which we should have before us in the treatment of such cases as the present one. It is necessary to do something more than merely constrict the aperture of the vulva. Dr. Marion Sims, who is well known for his very great success in reference to operations and mechanical devices for the treatment of uterine disorders, has employed a method which he strongly recommends in the treatment of these cases. Dr. Marion Sims removes a piece of mucous membrane on either side of the anterior part of the vagina. These raw surfaces are brought together by sutures, so that the canal is diminished to the extent of the width of the anterior wall of the vagina. In this way the capacity of the vagina is greatly diminished. This operation has been found to succeed very well in reducing the size of the vagina, and in preventing the recurrence of the prolapse under those circumstances. It occurred to me, in connexion with this case, that another method of operation would be more useful. Desiring, equally with Dr. Sims, to diminish the size of the vaginal canal, which was in this instance dilated to a very great extent, I operated upon the posterior wall of the vagina instead of the anterior. By means of incisions running parallel to the length of the vagina (Fig. 3) I removed a large oval strip of mucous membrane on each side. The edges of these raw surfaces were then brought together by a continuous wire suture. Thus the vaginal canal has been diminished to the extent represented in the respective widths of these two raw surfaces. The excess as regards the mucous membrane of the vagina presented itself chiefly at the posterior part, and this was my motive for thus operating. The continuous suture brought the edges of the wound very closely and nicely together. I do not imagine that this operation which has been performed on this patient will be sufficient. I contemplate the performance of another, an operation consisting in a diminution of the aperture of the vulva itself, as soon as the patient is sufficiently recovered from the effects of the first operation. Further—and the omission of this part of the treatment has frequently led to disappointment in the results of "perineal" operations,—it will be necessary to improve the condition of the uterus itself, and to restore the organ to its proper shape. The frequent use of the uterine sound will enable us to do something in this direction. A further step in the treatment of this case, which, however, will not be adopted till the patient is sent away, and allowed to resume her ordinary avocations, will consist in placing an oval ring pessary in the vagina, with the view of keeping the upper part of the vagina in its proper place.* You will see that at the moment when the patient presented herself it was impossible to carry out the principle upon which I have laid particular stress, in consequence of the difficulty in keeping the upper part of the vaginia in its proper place. The operations which have been performed and which are contemplated will have, if successful, the effect of enabling us to carry out that principle, and there is no doubt that when the uterus has been kept in its place for some months by the aid of a pessary, such as that which I have described to you, the patient will be completely cured.

Fig. 3.



I do not know that the removal of the mucous membrane from the posterior part of the vagina is likely to be, in all cases, preferable to its removal from the anterior part, which is the plan adopted by Dr. Marion Sims; but, looking at the circumstances of the case, I suspect that the method which was here employed would be likely to be equally useful in other cases also.

Clinical Lecture

ON

PARACENTESIS PERICARDII.

By T. Clifford Allbutt, M.A., M.D.,

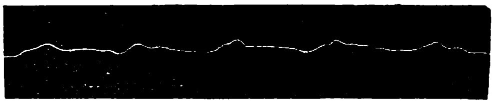
Physician to the Leeds General Infirmary, and Lecturer on the Practice of Medicine.

Gentlemen:—It is now two years and a half since I advised the operation of paracentesis pericardii in the case of a patient in the Leeds Infirmary who was at the point of death from effusion into the pericardium. The case was an acute one, and the operation was brilliantly successful, if I may be allowed to say so. The particulars were published in the *Medical Times* for November 3d, 1866; and Mr. Wheelhouse, who operated for me, also read a paper on the case to the Surgical Section of the British Medical Association at its last meeting. I shall now describe to you, and comment upon, an unsuccessful case of the same kind, in which Mr. Teale twice operated for me.

On the 29th of April last I was urgently called to see Miss H——, a patient of Mr. Mann's, who was suffering from pericarditis. Mr. Mann had been called to her but a short time previously. The patient, a weakly girl, twenty-seven years old, had been suffering from slight rheumatic pains for some days; medical advice had not been sought, and Mr. Mann, on his arrival, found that pericarditis had silently crept on, and that the patient was in much danger; the pains in the limbs had almost entirely and rather suddenly ceased. At the time of my visit, I found the patient suffering from what Jaccoud has well called the "paralytic form" of pericarditis. The girl was crouched on her left side, her face was deadly pale, very anxious, and covered with a cold sweat; her lips bloodless, her hands and feet cold, her respirations 90 in the minute, and there was some tendency to agitation. She clutched at the left breast, and complained of dreadful oppression at that part. On examining the chest as much as I dare, I was able to verify Mr. Mann's diagnosis, and to ascertain that the pericardium was greatly distended with fluid. There was evidence also of mitral regurgitation, for the first sound of the heart was quite inaudible and a faint blowing murmur synchronous with the stysole, might occasionally be heard at the apex. The lungs were everywhere resonant, except over a small region at the left base behind, where there was some deficiency. Moist sounds were to be heard all over both lungs, before and behind; and there was cough, with some watery and mucous expectoration. Her temperature was 104°. Her pulse was scarcely to be counted, and often imperceptible. I show you here a tracing of such a pulse, which I have borrowed from Marey's work on the Sphygmograph, and which was taken from a case very similar to our own. It was quite clear that we had to deal with a very dangerous form of pericarditis: a form which, like some forms of pleurisy, runs silently and quickly to effusion, rather than to coagulating and organizing exudation; a form, moreover, which, from the tendency to syncope from failure of the heart's action, has, I say, been named "paralytic." The patient was reduced indeed, to use Mr. Teale's happy parallel, to the state of one laboring under embolism of the pulmonary artery. There was the same deficiency of blood-supply to the lungs, the same congestion of the venous side with evidence of general pulmonary œdema, the same distress, and the same symptoms of poisoning by carbonic acid. I explained to Mr. Mann the operation I felt inclined to advise, but I shrank, more than I now should do, from having it performed at once. I did not expect the girl would live through the night; and, in any case, I was disposed, before operating, to try to restore her a little by cordial and supporting treatment. I said that if she survived the night I should counsel the operation. Mr. Mann most generously placed himself and his patient in my hands, to call in Mr. Wheelhouse, or do as I thought fit. The following day we found the patient with a little better force and better pulse. She had taken fairly of whisky punch and some food. Her pulse was 180; her temperature 104°; and there were the same symptoms of failing heart's action and of lung-oppression. We were now able to examine the chest carefully, and meanwhile we sent for Mr. Wheelhouse. On examining the chest in front, we found dulness extending upwards to the second rib fully, and to the first rib partially, on the left side. It extended laterally to the right sternal border on the one side, and downwards and outwards towards the axillary line on the other. Below, it reached a line drawn from the epigastrium to the axillary line. The dull space formed a triangle, of which this last formed the base line, while the blunt apex of it lay a little to the right of the middle point of the left collar-bone. The upper half of the dull space lightened up a little on inspiration, and was deadened again when the lung receded on expiration. The most complete dulness was from the root of the great vessels up to the heart's apex. A very distinct friction-sound could be heard over most of this space, and the apex-beat of the heart could be felt. The apex was displaced a little downwards and to the left, but was well within the base line of the dull triangle. The diaphragm was probably depressed, but neither spleen nor liver were much displaced. The apex moved a little to the left with that position of the patient—a sign which, at the time, I believed, in obedience to the statement of Oppolzer, to be diagnostic of pericardial effusion. I find, however, Gerhardt has shown, that in healthy persons the apex-beat may travel about two centimetres to the left when the position is changed to the left side. I had been accustomed to believe also that a full friction-sound could scarcely persist when effusion was in quantity. In our case, however, nothing could be clearer than this, that the apex was distinctly to be felt, and the rubbing to be heard, and even felt also, while at the same time there was as certainly a great effusion. On looking up this point, I find that Oppolzer describes the initiatory rub, the separation of the parts by effusion, and the returning rub during absorption, without any qualification. Niemeyer, however, says that the rubbing sounds are not only heard when the effusion is small in quantity, but also when it is considerable. ("Sondern kommen auch bei sehr copiöser Ansammlung von Flüssigkeit im Pericardium vor.") So that the presence of extensive friction did not, and rightly did not, prevent my urging the operation. The heart sounds themselves were as the day before; the first being replaced by an exceedingly distant murmur, the second being audible, but distant. The feebleness of the heart, and the consequent syncopic tendency and lung mischief, were so great that I believed myocarditis, or even fatty degeneration of the heart's tissue, as described in pericarditis by Virchow, was present. On examining the lungs behind we found moist sounds everywhere, and resonance everywhere save at the left base, where the lung had been partially emptied by the pressure of the distended pericardium. Here air but partially entered the lung. When we had made these examinations Mr. Teale arrived, whose aid, in Mr. Wheelhouse's absence, we had fortunately secured. He agreed in our diagnosis, and willingly undertook the operation. The breathing before the operation was 84 in the minute, very shallow and anxious. The pulse was at least 180, and of miserable quality; the temperature 104°.5, and the oppression very great. Mr. Teale operated (at 5.10 P. M.) with a fine exploring trocar (No. 1 Weiss) as Mr. Wheelhouse had done. He inserted it in the fifth interspace, about an inch from the left border of the sternum, and thrust the point upwards and inwards until it touched the heart. He then sheathed the point, and pushed the canula well home, until the heart jerked it sharply to and fro. The trocar was then withdrawn, and serum began to escape. The canula now slipped a little, and the flow ceased, so that Mr. Teale was obliged to reinsert the trocar, to carry the canula home again; it was then held in place. The fluid—a straw-colored serum—flowed again now, escaping rather with the impulse of the lung than of the heart. The flow, at first trickling, became more rapid as the lungs were able to expand, and change of position only seemed to aid the flow so far as it aided respiration. About five ounces of fluid was drawn off, which rather presented the characters of the fluid of hydro-pericardium than of acute pericarditis. In my former case the fluid was more of a pinkish than of a straw-colored serum, and mostly coagulated after withdrawal. The operation gave our patient much relief. The breathing became much deeper and more tranquil, and settled down to 68 in the minute; the pulse gained volume wonderfully, and came down to 130: the temperature was still 104°. The facial expression improved greatly, the wrinkles smoothing, and the alæ nasi sinking. The patient was able to recline more easily, and she

---

* These further procedures have been subsequently successfully carried out



told us repeatedly how much she was relieved. We put a large poultice over the region of the heart, and administered a dose of morphia. On the next day I found Mr. Teale at the house, Mr. Mann being engaged elsewhere. We found the præcordial oppression still much diminished, and the aspect much less anxious. We regretted to find, however, that the lungs were not only œdematous, but fully bronchitic, for both small and large moist sounds were generally audible, and the temperature remained at 104°. It was but too clear to us that she could not survive. On examining the heart, we found the area of dulness much diminished, presenting, as it did immediately after the operation, less than half its former extent. There was a tympanitic sound over the root of the heart, occupying the space of about a shilling, showing, to our great regret, that air had entered the sac. No air had entered in my previous case with the same operation. The bubble, however, was evidently small, and there was no "water-wheel" sound to be heard with the stethoscope. A louder friction-sound was audible, and the systolic murmur was much more plain. We ordered turpentine applications to the chest, back and front, ammonia, stimulants, and supporting diet—which latter, by the way, had been much better borne since the relief of the pressure on the stomach.* The following day, Mr. Teale, Mr Mann and myself found the poor girl very much worse—in the state indeed, in which I found her on my first visit. The pericardium had refilled to its former size, and with the effusion had returned the oppression, the anxiety, the shallow breathing, the almost imperceptible fluttering pulse, the cold extremities, and impending syncope. Friction-sound was still distinctly audible, though less loud and less extensive. We felt that, although the bronchitis continued, yet this state was due in great part to the renewed effusion, and we did not therefore shrink from advising a repetition of the operation. The girl and her friends were willing to have the relief again. The breathing was now 78; the pulse unaccountable and fluttering; the temperature 104·5°. Mr. Teale drew off this time six ounces of serum, which had a yellow look, and was no doubt, slightly turbid with pus. Considerable relief was obtained, though less, of course, than before; and after the operation the breathing was 68, the pulse being 140 and very much improved in volume. Still the relief was too clearly but temporary, and the patient died in the night of bronchitis and carbonic acid poisoning. A time was fixed for an autopsy, with consent of the friends; but on our arriving at the house, we found the mother in such distress that we did not think it right to press the matter. Greatly disappointed as we were, we were obliged to remember that science is only justified in humanity.

From this most interesting case, gentlemen, we learn again that tapping the pericardium is a very simple operation if performed with a fine trocar, as was done first by Aran. The operation with the bistoury as practiced by Trosseau seems to me, upon his own showing, to have been a bungle, while his objections to the trocar are inconclusive. That the heart is so delicate an organ that the mere contact of an instrument is sufficient to injure it, is a baseless superstition. Many cases are on record in which recovery has followed wounds of the heart and pericardium. So far as pain is concerned, Dr. Georges Fischer, in his recent essay on Wounds of the Heart and Pericardium (reviewed in the May number of the *Archives Générales de Médecine*, p. 618) supports the opinion of Harvey, Ollenroth, and Bamberger, that the heart is insensible. Mr. Mann tells me also that he once saw the chest-wall and pericardium slit open and the heart exposed by a suicidal maniac, so that the heart could be touched, and was repeatedly touched, with the finger. The touch was painless, and the lunatic recovered, in spite of the wound and the explorations. The introduction of air into the pericardium is, however, to be carefully avoided; and on the next occasion of this kind I should advise the connection of the canula with an india rubber tube, so that the effusion may be allowed to escape under water. The refilling of the sac in this case, occurring in a weakly and probably tubercular girl, with the absence of refilling in my former acute case, occurring in a healthy man,—this, and the contrast between the fluids removed, show, as we should expect, that the operation is more hopeful in frankly rheumatic cases than in cases which, however rapid, border rather upon hydro-pericardium. The ready emptying of the sac by expansion of the lung and ascent of the diaphragm in both cases is interesting, and removes Oppolzer's objection to the operation; which is, that the sac, having no elasticity, and being placed in the unyielding chest-cavity, cannot be properly emptied, or if emptied will refill. Experience shows, first of all, that even the removal of a small quantity of the effusion may give astonishing relief, and, by releasing the vessels, may allow of quicker re-absorption; and, secondly, that non-adhesion and refilling depend rather upon the tubercular diathesis or low vitality of the patient than upon the mechanical conditions of the parts.

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.,
Lecturer on Orthopædic Surgery at the Hospital.

LECTURE IX.

ON DISTORTIONS OF THE TRUNK AND NECK.

Torticollis, or *wry-neck*, occurs both as a congenital and as a non-congenital affection. It is not common as a congenital affection; but it is met with not unfrequently in children from two to twelve years of age; and, indeed, it may be seen in any period until middle life.

Wry-neck is occasioned by shortening of the cervical muscles, especially the sterno-mastoid muscle through which the head is drawn to one side, the ear being approximated to the shoulder, and the chin projected in the opposite direction. Not only is the sterno-mastoid muscle contracted, but the trapezius and the scaleni become in a similar manner subsequently affected; and thus the shoulder is raised towards the head, while the head is drawn down towards the shoulder. In this manner a cervical curve is produced, which presents its concavity towards the retracted muscles, and which is followed by a dorsal curve,—as was explained in the last lecture, where wry-neck was spoken of as a cause of spinal curvature.

---

* There was none of the difficulty of swallowing noticed in such cases by Stokes. Vomiting there had been.

One or both insertions of the sterno-mastoid muscle may be retracted; and this is especially the case in congenital wry-neck, as I have more than once latety had occasion to show you. On the other hand the whole muscle is generally retracted when the deformity occurs as a non-congenital affection.

Wry-neck produces singular changes in the features. The angle of the mouth is depressed, and the cleft of the eyelids is drawn on to a lower level than on the opposite side; the eyebrow, too, is drawn down, and the side of the face appears to be smaller and less developed than on the opposite side—it is motionless and without expression, while the features on the other side of the face appear to be unnaturally expanded.

When wry-neck is allowed to proceed unchecked, and without any attempt being made to prevent further retraction, deformity results both of the neck and of the spinal column, which may attain to serious proportions.

Treatment.—It is with wry-neck as with some other cases of deformity, that, when discovered and treated at an early period, mechanical means may be sufficient to overcome such distortion as is occasioned by slight muscular retraction. It is however, rare that extension can be so effectively and continuously employed as to overcome and remove even slight deformity which depends on muscular retraction. And, rather than lose much time in futile attempts at extension, it is preferable to proceed to the subcutaneous section of the tendons of the retracted muscles.

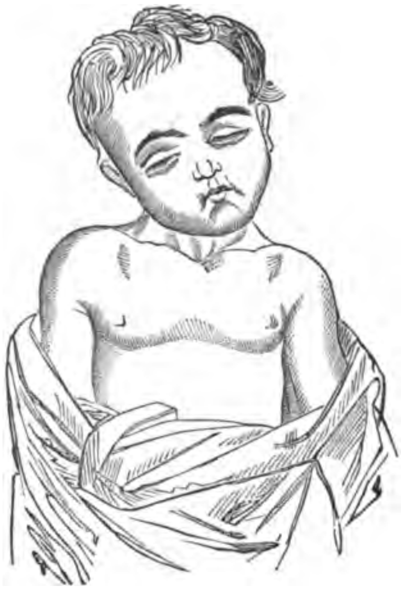
As in the case of F. S——, in Princess's ward, from whom Fig. 28 was taken, it is sometimes alone necessary to divide the clavicular insertion; while again, as in another instance in the same ward, the sternal attachment of the muscle alone requires division. For the most part, however, both the sternal and the clavicular insertions of the muscle should be divided.

When it is required to divide both the sternal and the clavicular portions of the muscle, separate punctures should be made, so that the blade of the knife may be kept closely in contact with each portion of tendon. The punctures may be made most conveniently about one inch above the clavicle, and the knife being carried well behind each portion of the tendon in succession, the tenden will be divided on turning the edge of the knife towards it, and using it with a cutting motion, at the same time that the head is so held as to make the muscle tense. It is seldom necessary to divide other structures than the two portions of the muscle now indicated, except it be, perhaps, a band or two of fascia; for other contracted structures will probably yield to mechanical extension after the greater obstruction caused by the retracted sterno-mastoid muscle has thus been removed.

After the operation, the head is to be supported in such a manner that the chin inclines towards the breast; so that the little wounds may readily heal, and reunion of the divided tendon may take place. Then, on the fourth or fifth day, extension with a suitable instrument, may commence, and be carried on gradually, until the head is raised into its normal position; and, indeed, extension should proceed so far that power may be obtained to move the chin equally to one side or the other.

So soon as the position of the head is restored, care must be taken to remove the spinal curves. The child to whom allusion has already been made, and who is represented in Fig. 28, is only fourteen months old; but although so young, there is already a dorsal curve of so severe a character that it will take much longer time to remove this spinal curve than it took to remove the primary affection—wry-neck,—for which she was admitted into the hospital.

Fig. 28.



Original Papers.

ON THE STRUCTURE OF THE ADULT HUMAN VITREOUS HUMOR.

By David Smith, M.D., M.R.C.S.

THE RELATION OF THE VITREOUS HUMOR TO INTRAOCULAR TENSION.

(*Continued from August No.—p.* 420.)

II. *Relation of the Ocular Tunics to the Aqueous Capsule of the Eye.*

The relation of the retina to the aqueous capsule having been already considered, it only remains to consider the relation of the sclerotica and chloroid.

Between the humors of the eye and the *sclerotica* no vital relations exist, it being unconnected with them either by nutritive or nervous action. The sclerotica is composed almost exclusively of white fibrous tissue, from which it possesses a considerable degree t stiffness; so that when the contents of the globe are evacuated, it retains, for the most part, its original curvature. Its firmness enables it to give support to the choroidal circulation within, and to protect the eyeball from injury without; and thus it would appear to bear the same relation to the contents of the globe that the cranium does to the contents of the head. A theory is commonly held that the sclerotica in health accommodates itself to the distending forces within the eye; and that in glaucoma this tunic is abnormally rigid, congenitally or acquired, whereby it resists distension. According to this view the distending forces of the globe fall in the first place on the delicate elements of the retina and limber vessels of the choroid, but ultimately sustained by the sclerotica. In addition to what has been already said in opposition to this theory, the sclerotica is almost devoid of elastic tissue—an elementary structure essential for its expansion. Rather will it be found that the distending force of the humors is borne by structures within the *aqueous capsule*; and that the mechanical relation which subsists between the vitreous body and tunics of the posterior hemishere, in so far as these correspond to the retina, is that they give each other support, but that they do not act and react upon each other.

The *choroid* behind the ora serrata is composed of arteries, capillaries, and veins woven into a tunic by fibrous tissue and pigment cells. The afferent and efferent bloodvessels of the choroid, before they pierce the sclerotica, are reduced to a small size, and make up by numbers what they want in calibre. Again, within the choroid itself, they are subdivided into numerous branches of still smaller size. As the lateral pressure of the blood upon the walls of the vessels of any given part diminishes in the ratio of their subdivision, owing to the increase in the aggregate diameter of the branches over the parent trunk, so this subdivision of the vessels of the choroid must serve an important end in reducing the lateral pressure of the blood within that tunic to the lowest minimum. Another effect of this subdivision is the prevention of pulsation, which, if it existed in the vessels of the choroid, would be a serious impediment to vision.

From experiments made by Memorsky and others, it has been satisfactorily proved that the amount of blood within the choroid in health is subject to little variation; and that it is not subject to passive congestions, as are other parts of the body. One reason of this is that the fibrous tissue woven amongst the vessels prevents undue distension of the latter. Another reason is that the ciliary arteries and veins channel the sclerotica in an oblique direction from behind forwards, so that the walls of the apertures through which the vessels pass close like a valve when sudden increased pressure from within outwards falls upon that tunic. But though means exist within the eye for preventing the choroid, in health, from being suddenly overcharged with blood by causes acting *ab extra*, as will be presently pointed out, it is liable to be considerably increased by the operation of the more gradual nutritive forces of disease acting *ab intra*. Accordingly, in the first stage of many of the deeper inflammations of the eye, the tension of the sclerotica is heightened, simply from increase of blood in the choroid. In the latter stages, however, many of the vessels of the choroid become occluded, and ultimately reduced to shrunken cords, which lowers the tension of the sclerotica below the healthy standard.

For detecting the amount and force of the choroidal circulation, the same plan is to be adopted as that already described for determining the pressure of the fluid within the aqueous capsule (p. 634); but in the present case the fingers must be applied over the sclerotica in place of the cornea, as in the former instance. In this case also the patient should be directed to turn the eyes downward, and the tension of the sclerotica felt through the upper lid by the two forefingers. The dimpling of the sclerotica which results is owing to the displacement of blood within the vessels of the choroid; and, therefore, the resistance given to the finger in the healthy states of parts represents the force of the intraocular circulation. So much is this the case, that I have found that the degree of resistance which the sclerotica gives to the finger in the healthy eye is a good index of the force of the *systemic* circulation. But the tension of the sclerotica in diseases of the eye does not always represent the lateral pressure of the blood in the choroid. When the vitreous fluid is much increased, it is at the expense of so much blood within the choroid, and then the distending force of the fluid comes to bear upon the sclerotica. In such a case the force required to dimple the sclerotica is greatly increased, and represents the combined pressure of the blood in the choroid and the distending force of the humors of the eye.

The tension of the cornea in health is usually slightly greater than that of the sclerotica, owing to the distending force of the humors of the eye being superior to the lateral pressure of the blood in the chloroid. Hence, in diseases attended with exalted intraocular tension, it is more common to have that condition arising from superabundance of the fluid humors than increase in the amount and force of the choroidal circulation, on account of the former overcoming the latter.

III. *The Principles which regulate the amount of Fluid within the Eye.*

The fluid of the eye constitutes one of the chief factors in producing intraocular tension, and the principles which regulate its amount are of great importance in explaining pathological, as well as physiological, hardness of the globe. As was formerly pointed out, the humors of the eye are contained within a capsule which completely isolates them from nearly all the tunics of the eyeball. It surrounds and limits the fluid both in the anterior and posterior hemispheres, the membranes of the two hemispheres being connected by processes which respectively pass backwards and forwards into the base of the iris and corpus ciliare, where they meet.

The amount of fluid which finds admission into the aqueous capsule of the eye, in health, is mainly influenced by two conditions—the physical and the vital. *Of the physical conditions, the chief one that determines its repletion is imbibition.* Every tissue of the body possesses the property of imbibition to a greater or less extent, that being one of the conditions necessary for their nutrition. To illustrate the effects of this process in determining the distension of the aqueous capsule of the eye with fluid, let the eyeball be stripped of its tunics to the border of the cornea, preserving the hyaloid membrane and the connections of the posterior elastic lamina with the ciliary body entire, and let the sphere so prepared be placed on a square of glass, so as to allow the greater part of the fluids of the eye to drain away. If, after this has been done, the shrivelled capsule be placed in pure water, it will absorb the water—the aqueous chambers will become filled, the vitreous tissue will swell up, and the whole aqueous capsule will become as much distended as it was formerly. This is explained by the physical agencies of imbibition; and the same force exists within the eye during life; but in the latter case, in place of the capsule absorbing fluid from the whole extent of its surface, the process of transudation is confined, almost exclusively, to that part of it which corresponds to the ciliary processes, from which both the aqueous and vitreous humors are derived. In the repletion of the aqueous capsule with fluid, both after death and during life, the physical process is the same—the capsule in each case continues to drink in fluid until it resists further distension.

But the force of imbibition, by which the aqueous capsule of the eye is replenished with healthy serous fluid, must be also somewhat assisted by *the force of the circulatory current* within the vessels of the ciliary processes. It is usual in the body that the amount of fluid which transudes through the vascular walls stands in some relation to their distension by the blood; and since it is known that, in diseases of the eye attended with impediment to the return of blood, an increase of fluid into either hemisphere takes place, we are justified in placing intravascular force as one of the conditions in health which assist the process of imbibition in replenishing the aqueous capsule with fluid.

Increased distension of the vessels of the choroid from impediment to the return of blood outside the eye, is not very apt to occur, owing to the peculiarity, already referred to, of the openings in the sclerotica through which the ciliary veins pass—viz., that the veins channel that tunic in an oblique direction, forming valve-like openings (Leber), which close with slight increase of pressure from within, and prevent the regurgitation of blood into the eye. Hence passive congestions near the eye seldom increase, to any extent, the lateral pressure of blood within the choroid, and, consequently, seldom give rise to increased transudation of fluid into the aqueous capsule. But the same anatomical peculiarity which prevents passive congestion of the choroid, when the obstruction to the return of blood exists outside the eye, is a cause of increased lateral pressure within the eye when that fluid is attracted to it in larger quantity by morbid processes going on in its deeper structures. In the latter case also, the venous openings in the sclerotica close when the intraocular pressure is increased, the exit of the blood from the organ is hindered or almost entirely obstructed, and, the attraction of blood to the organ still continuing, increased distension of the vessels of the choroid is the natural consequence. Another condition which acts in bringing about the same injurious result is the rigidity of the walls of the same openings in the sclerotica, which are just sufficient in diameter to allow the veins to pass: and as increased return of blood by the veins in any case takes place by enlargement in the diameter of the vessels, however much the ciliary veins may be distended within the eye, the diameter of the openings in the sclerotica remains the same, which condition thus acts the part of a ligature, and increases still more the stagnation of blood within the eye. Impediment to the return of blood from these causes gives rise to increased intravascular pressure within the choroid, and, as a sequence, of increased transudation of serous fluid from the vessels into the aqueous capsule of the eye, as a means of relieving their distension.

Against this susceptibility to transudation of serous fluid into the aqueous capsule there is, in both the anterior and posterior hemispheres, a *counterbalancing elastic force* which prevents imbibition beyond a certain extent. In the anterior hemisphere this force resides in the posterior elastic lamina of the cornea, and in the posterior hemisphere in the elastic tisssue of the vitreous humor and ciliary body. The action of the former in producing this effect is too obvious to require any further comment; that of the vitreous tissue and ciliary body may be illustrated by the following experiment:—Deprive the eyeball of one of the larger quadrupeds of its tunics as far forward as the ora serrata, leaving the tunics anterior to this line entire, and let the vitreous so exposed be macerated in pure water. So long as the elasticity of the vitreous tissue and ciliary body remains perfect, the dimensions of the humor will not increase; but as the elastic resistance of these parts gives way, the anterior facing of the humor will begin to enlarge, which will ultimately increase to such a degree as to obliterate the plaitings of the zone of Zinn, and expand the ciliary processes. The same effect also occurs during life, when the vitreous tissue is weakened or broken up from inflammatory action of the choroid. In such a case, if the vessels of the ciliary processes remain patent to the circulatory current, the vitreous fluid may continue to be poured out in undiminished quantity, and as the resisting force of the vitreous tissue is destroyed, the distension of the vitreous chamber will go on increasing until the fluid meet with resistance from the outer tunics of the globe.

The *rationale* by which the vitreous tissue and posterior elastic lamina act in resisting transudation of serous fluid into the aqueous capsule, seems to be this: They exercise a contractile power over the aqueous fluid contained within the capsule, equal to the distending force of that fluid. But the action of the vitreous tissue is peculiar in this, that in place of the resisting force being applied to the circumference of the humor, as is the case in the anterior hemisphere, it is borne, in a great measure, by a structure which intersects the humor itself, the hyaloid membrane which surrounds it being inextensible.

Thus there exists within the aqueous capsule of the eye two counterbalancing forces, one which determines its repletion with fluid, and the other which limits the imbibition of the fluid beyond a certain extent; and thus the aqueous capsule has almost entirely within itself the forces which cultivated with more method, persistence, zeal, skill, and *success* than at any former period of our history. That all this is so I most firmly believe, and give all honor to those who give up their lives to these investigations. Yet I equally believe that, as a profession, we have gone astray from our true mission. It is to some extent true now, as it was in the day when Bacon wrote, "that Medicine is a science which hath been more professed than labored, more labored than advanced,—the labor being, in my judgment, more in a circle than progressive: I find much iteration, but small addition."

The field for thought that is here opened is very extensive; it may be, boundless. My object is to direct attention to a few only of our most obvious errors, and those that are most fruitful for evil. These may be noticed under four heads: as errors of theory, of education, of practice, and of fashion.

1. I have stated before, that Medicine should be, before all things, the *art of healing*. I believe that our first and fundamental error in theory has been the overlooking of this definition, and viewing Medicine as a science. Now, in any proper acceptation of words, Medicine is not, and can never be, a science; it is an art, *sui generis*—fed, fortified, and enlightened by science,—but in no wise a science in itself. This is not a mere speculative matter—an affair of terminology. So long as we view Medicine as a science, so long shall we be disappointed in our progress and our results. Science is steady, certain, and progressive; art is vacillating, doubtful, and limited. If we expect exactitude and certainty in Medicine, because we rank it as a science, we shall be ever failing, ever doubting, and losing our faith, and, as a necessary consequence, our zeal. We can never hope to reduce Medicine to mathematical formulas, in which disease and remedy will represent one side of the equation, and health the other. We deal with such an infinite variety of unknown quantities, and indefinite variables, that we can never hope to reduce them to any fixed expression that can have a practical value. Besides disease, we have to deal in each case with age, sex, temperament, and previous history—elements which can to some extent be allowed for; we have also to deal with idiosyncrasy, with heritage, and with the thousand social surroundings, which will always baffle our calculations, and stultify our foregone conclusions.

At various epochs in the history of Medicine, it has been hoped that it might become a special branch of chemical science. Some years ago this hope assumed a more definite and apparently promising form than it had ever before done. How we have been disappointed in this direction it is needless to show. No one now contemplates the possibility—save in some few exceptional instances—of forming out of two active disturbing causes, disease and chemical remedy, the neutral compound, health. Because there is a prevalence of acidity superficially apparent, we do not *therefore* calculate that alkalies will cure the pathological condition in which it is manifested, nor *vice versâ*. We cannot with certainty calculate even upon altering an acid or an alkaline condition of the secretions by the obvious *chemical* resources. On the contrary, there is no more certain mode of relief known, for some conditions of the stomach in which intense acidity is a prominent symptom, than the administration of acids.

Science is knowledge, but such knowledge is not power in any practical sense. We know the motions of the planets, and can predict their phenomena with the utmost exactness, but we cannot influence them in any way. By science we know disease: science is diagnostic. It is by art that we treat it: art is therapeutic. All our art is derived from experience. It may be that in some few instances *à priori* considerations lead us to try certain modes of treatment: but in general they are empirical, and in all cases the final acceptance or rejection of the method is governed by experience. This could not be were Medicine a science. Science knows, and is precise and positive. Art is variable, and selects. Science submits to no ignorance; but art is ignorant of much. Science is essentially contemplative; art is active. In the apt antithesis of Dr. John Brown: Science puffeth up; art buildeth up.

Practically, the result of this error of theory is this: with every advance of science, we are too much disposed to think that an alteration in our art is necessary; otherwise we should be tacitly admitting the barrenness of the science. We forget the results of long experience, to run after the phantoms evoked by our improved knowledge. We make a discovery in chemistry or in microscopical science, and we are but ill satisfied if we cannot adapt it to our art. We improve in physiological knowledge; we learn the functions of a nervous tract with greater certainty; or we trace the relations of certain organs to extraneous influence more accurately; and in accordance with this, we alter modes of treatment which, up to the present time, we have been accustomed to think and to find satisfactory. Our disappointment in the result does not always teach us wisdom for the future.

I do not propose to enter deeply into the abstract question, but will merely state what I believe to be the fact, that pure science has in general done but little for art; whilst art has constantly and largely been contributing to the progress of science. In our profession this has eminently been the case: not the men of science, but those of careful and accurate observation, have generally been the men distinguished for healing gifts. Avoiding any allusions to men of the present day, let me illustrate my meaning by contrasting Harvey, the man of science, with Sydenham, the man of concrete observation; Sir Charles Bell, the discoverer, with Abercrombie, the physician.

Medicine has the same relation to science that poetry or painting has; and inasmuch as the most complete knowledge of the laws of perspective and the theory of light and colors would fail to make a painter; or the most intimate acquaintance with the rules of versification would fail to make a poet; so the profoundest knowledge of physiology and of all the sciences tributary to Medicine would entirely fail to make a competent physician. Medicine is a faculty to be acquired, not a lesson to be learned—to be acquired by long and patient observation of complex phenomena, in their ever-varying combinations,—not to be reduced to the hard and inelastic formulæ of science. In itself, I reverence science; but in the interests of true progress and of humanity, I trust we shall, for the future, hear more of the art of healing and less of the science of Medicine.

2. The most important consequence of this theoretical error is, the false system of education that is entailed and necessitated thereby. Medicine being considered a science, it appears necessary to cultivate all the collateral sciences to the utmost. A man may be legally qualified to practice medicine at twenty-one years of age. By that time he must have an accurate and minute knowledge of descriptive and general Anatomy; he must be well versed in the latest views on Physiology; his knowledge of Pathology must be well vouched for: he must be sufficiently versed in Chemistry to be enabled to analyse ordinary solutions, besides cumbering his memory with names, numbers, and proportions without limit; he must be able to describe in scientific phrase, any plant which enters into the composition of the Materia Medica, and to anatomise any leaf or flower *secundum artem*; and he must have a competent theoretical knowledge of the principles and practice of Medicine and Surgery. By this time, also, he will have seen much operative surgery, and a minimum of medical practice at the hospital; and he must have practiced vaccination, obstetrics, and the minor operations of surgery; eking out this trifling curriculum with the study of Forensic Medicine and Toxicology. Should he be destined for the higher walks of the profession, it would be much easier and shorter to enumerate the few subjects he need not study, than to catalogue the heterogeneous farrago of learning with which he must bewilder his unfortunate brain. It is evident that much of this learning must be acquired in a superficial and perfunctory manner, and that the knowledge necessary for passing the examinations must be "crammed"—to be disgorged and forgotten at the earliest possible period afterwards.

Against the combined wisdom of modern authorities, I would not venture to assert positively that all this is not wise or necessary. It may be that a precise knowledge of all the processes and foramina of the sphenoid and other bones is an urgent matter; that we cannot give quinine with due effect unless we can describe botanically the Cinchona oblongifolia; and that we are virtually disqualified from administering a dose of calomel, unless we remember accurately its chemical composition and mode of preparation. But this I can assert,—that numbers of young men, hard-working, conscientious students, gifted with intelligence above the average, who have passed through the schools with a single eye to their ultimate mission, with credit and distinction, have confessed to me with bitterness and shame how utterly helpless they felt when brought face to face with disease, and how intolerably far apart from the great purpose of their lives was almost the whole of their former studies. A great French surgeon once spoke of the necessity of "spoiling a hatful of eyes" in learning the extraction of cataract: how many hecatombs of patients are likely to perish whilst the student is painfully forgetting his school lore, and slowly acquiring the art of healing? This art must be learned by practice, accompanied by practical tuition; and a very large proportion of all else that is now taught is just as necessary, as it would be to insist that a painter must be able to make his own colors, and be acquainted with their natural history, and chemical constitution, before he is allowed to exhibit a picture.

That a physician should be a man of science is a very desirable thing; but he ought *first* to be a physician, and accessorily the other; whereas, under our present system of education, he is first made a man of science, and is left to take the remote and uncertain chance of becoming a physician in the true sense of the word.

I believe that here is the root of the evil, however difficult it may be to devise a remedy. The ranks of our profession are constantly recruited with young, *very* young men, who confess themselves, in a great many instances, incompetent to grapple with disease;—well educated, highly cultivated, it may be, in science, but wholly helpless when confronted with the responsibility of a serious case. Feeling their own inefficiency, they are prepared to adopt any views or theories of practice, however wild, that are propounded with sufficient confidence, or that are the fashion of the day. Science has *principles*, whereas art has *methods*. Instead of searching after methods, the tendency of the day is to seek for principles. As these cannot, by the hypothesis, be attained, loose and plausible theories are adopted in their place. Hence the variable and vacillating character of our treatment, and the fatal error ultimately, of losing faith in all therapeutics, except expectancy and *stimulation*.

3 and 4. This brings me to the errors of fashion and practice, which it is more convenient to discuss together. To enter fully into this subject would be to write the history of Medicine. For this I am not prepared. I can, therefore, but give a few illustrations of my meaning.

I believe that, in deference to popular prejudices and pseudo-scientific theories, we have from time to time forsaken and lost sight of modes of treatment that had been tried and proved as efficacious by long years of experience. The murrain of homœopathy and other follies came upon us for our sins. Many of our profession, having, from causes already stated, no reliable methods of their own, adopted the new lights, partly from fashion, partly from lack of any conviction whatever, and partly from failure in wielding the legitimate weapons of war against disease. Many others, professing eclectic impartiality, neither adopted these views nor adhered to their own, but lapsed into utter unbelief as to our power of influencing disease. Others again, witnessing the conflict of opinions amongst intelligent men, grew utterly careless, thinking that any course of treatment would do well that was the least irksome. Finally, a large majority forsook certain forms of *active* treatment, such as had been proved to be powerful in controlling certain diseases, because they seemed to be no longer in accordance "with the spirit of the age," and attempted to justify this to their own minds by some theories of "change of type" in disease.

An apt illustration of these remarks may be drawn from bleeding. I am no advocate for the indiscriminate use of the lancet that prevailed at one time; but I believe that in forsaking it so entirely as we have done, we have relinquished a most powerful and efficient agent in therapeutics. It was, in former days, the practice to treat many inflammatory and congestive affections by bleeding; and those who remember the results cannot fail to see that many cases were cured or cut short by this course that are now left to the chances of almost spontaneous cure—certainly with unfavorable results to mortality. We seem to have forgotten that spontaneous hæmorrhage, from the nose or elsewhere, often appears to avert serious illness, and to indicate the artificial mode of cure. Speaking from personal remembrance, no theory can ever make me forget the blissful, immediate, and perfect relief that twice followed bleeding in two attacks of croup. I have, even in modern times, also seen the most marvellous alteration for the better produced by bloodletting in cases of lung-congestion resulting from heart-disease, when the "supporting system" had been long persevered in, with the sole effect of aggravating the symtoms. Is it not worthy of consideration, also, whether the increased fatality of apoplexy, and sundry other affections of the brain, is not in some measure due to our neglect of this agency?

In like manner has the use of mercurial preparations been subjected to the vagaries of fashion and theory. Until late years, the utility of mercury in some affections of the liver, for instance, was never doubted; and the results of practice were strongly confirmatory of this view. Yet no sooner is it discovered that mercury does something, or fails to do something, in the animal economy, that was not known before, than we ignore our previous therapeutic experience, and adopt some other untried method of cure.*

The same observations may apply with equal force to the use of active purgatives and other potent agents of our materia medica. We now make but little use of these, compared with old times. And yet no one who has been much engaged in actual practice can fail to remember numerous instances in which great and immediate benefit has accrued, obviously *from* their use. Does not this prove that our disappointment in the general results, and our consequent abandonment of the means, are due simply to our own ignorance,—to the lack of careful, persistent observation of symptoms, and in no wise to want of power or virtue in the remedies themselves?

I have reserved for this late consideration one monstrous and gigantic source of evil—a compound of theory and resultant practice,—which I believe to be the cause of more avoidable deaths than all our other errors combined. The theory is, that all disease tends to death, and *therefore* the powers of life must be supported. The practice is, the great prevalence of feeding and excessive stimulation. Space does not allow me to enter upon any scientific investigation of the subject. I must content myself with giving the *result* of long and careful thought, with ample test and experiment in hospital practice. That result is, that nothing can be more erroneous than the theory—nothing more fatal or more fruitful in proteiform evil than the practice.

I have stated in the previous paper that the deaths from bronchitis have increased from 2067 in 1838 to 41,000 in 1866, and that those from "heart-disease" have increased during the same time from 3319 to 21,197. Now bronchitis is not, or rather ought not to be, an essentially fatal disease, in the sense that cancer, pyæmia, or phthisis may be considered such. Disease of the heart is likely, in some degree, to shorten life, but is by no means so essentially and speedily fatal as is often supposed. It is almost always by the production of secondary and congestive affections that disease of the heart proves fatal, and if these can be warded off, life may be prolonged indefinitely. I have known many patients with valvular obstruction live a long term of years, and at the end be hurried off by indiscreet zeal in treatment. I cannot give individual instances for obvious reasons.

With regard to these two diseases, bronchitis and heart affection, the increased mortality in which is so enormous as to account for the whole average increase in deaths, I have not the slightest hesitation in attributing the fatal result, in a vast proportion of the cases, to the vicious system of treatment that has become more and more prevalent for many years, and especially to that most pernicious habit of fashion of giving stimulants largely and indiscriminately. Alcohol is poison in bronchitis, speaking generally; and in affections of the heart there is nothing that so much favors the development of local congestions as these stimulants.

Another serious evil connected with this practice, is its ultimate result on individuals and families, apart from the disease. By the loose method in which many of our profession order wine and brandy for even slight neuralgic affections, a taste for drinking is established, the consequences of which are often not to be calculated. Most assuredly I have seen large families swept off entirely, all by affections connected with alcoholism, the original use of the stimulant having been "by medical order."

I wish very briefly to notice two other circumstances connected with our modes of practice: one of which has a tendency to render therapeutics uncertain; the other to hinder the true advance of Medicine. I refer to the constant running after new medical agents; and to the system of medical specialisms. The evils of the former practice are patent and glaring. New drugs are introduced, and vaunted as specifics; and before their virtues or properties have been ascertained by experience, they are deposed in popular favor by some other and newer remedy. Hence arises our woful want of true knowledge as to the weapons at our command, their virtues, and the proper method of using them.

I cannot venture to say much more upon the practice, now so prevalent, of dismembering the organism, and making a specialism of the treatment of some one class of diseases.* I believe that the true method of viewing disease is, as a *departure from proper co-ordination of all the functions.* If this be so, then the prevalent practice must be opposed to the advance of true knowledge; not to dwell upon the fact that thereby our best men are withdrawing from the field of general utility, and the great and all-important subject, the detention and treatment of *obscure disease*, is systematically neglected. But with this brief hint I dismiss the subject at present, as being too extensive, and, I may add, too delicate in relation to the prejudices of many, to dwell upon more fully.

---

* I refer here wholly and solely to specialism in *medical* disease. I believe it to be a necessary and advisable proceeding in many departments of *surgery*.

* It is not long since that I saw a case of simple jaundice that had been under the care of one of our most eminent specialists. It had resisted the most *strenuous efforts* to cure it by small doses of solution of acetate of ammonia (!); and this being the case, the patient was told that it was a case of "scirrhus of the liver," and was sent home to die! No active treatment, and no mercurial. had been tried. A few small doses of mercury-with-chalk, with other mild treatment, removed the affection; and I believe the patient is alive and well at the present time.

Thus I have endeavored, very imperfectly, to trace a few of the most prominent causes for the sad phenomenon of the retrogression of our art, *pari passu* with the advance of our science. The knowledge of this evil should suggest the remedy, so urgently needed. Perhaps some bolder pen than mine may take up the theme, and expose the "sores and imposthumes" from which we, as a profession, are suffering. Meanwhile, I would only suggest that our first reform should be directed to our systems of education,—*ab initio*—to devise some real, sound, practical system of teaching and learning the Art of Healing.

Harley-street, May, 1869.

REMARKS
ON THE
ANTISEPTIC TREATMENT OF WOUNDS.

By E. R. Bickersteth, F.R.C.S., Edin.,
Surgeon to the Liverpool Royal Infirmary.

(*Continued from August No.—p. 425.*)

Aneurism of the external iliac artery; deligation with antiseptic catgut; cure.—William H. N——, aged thirty, mate of an American packet-ship, was admitted into the Royal Infirmary on the 31st of March last. He was a tall, muscular, healthy-looking man, and had always enjoyed good health till sixteen weeks previously, when, during a gale of wind, he was thrown down, and severely sprained his right groin. Soon afterwards he noticed a swelling above Poupart's ligament, which continued to increase steadily. One xamination, a tumor of oblong form, the size of a common hen's egg, was found immediately above the ligament in the line of the external iliac artery. It pulsated vigorously, and the ordinary aneurismal bruit was plainly heard. The patient having remained quietly in bed for some days, as the tumor was obviously increasing, it was determined to tie the artery. The operation was performed on the 6th of April, directly after the case last narrated. An incision, six inches in length, was commenced about two inches above and to the inner side of the anterior superior spinous process, and carried downwards and inwards in a curved direction over the surface of the aneurism. The same antiseptic precautions were adopted as in the previous case, and no difficulty occurred in reaching the artery. The only circumstances worthy of mention were, the very great developement of the abdominal muscles, particularly of the internal oblique and transversalis, which were each nearly half an inch in thickness; and the position of the external iliac artery, which instead of resting exactly on the upper edge of the true pelvis, was fully half an inch lower down, lying fairly within the margin of the brim. The position of the aneurism necessitated a high ligature of the artery, and at the point where it was tied, just below the bifurcation, I could feel distinctly with my finger the common iliac and its point of division into the external and internal branches. Both ends of the catgut were cut off close to the knot, the wound well washed out with carbolic lotion (one in forty), and six or eight sutures passed through the skin, so as to keep the edges of the incision in accurate contact. Two pads of lint, well saturated with carbolic oil (one in five), and each three folds in thickness, were then placed over the wound, and covered with gutta-percha, cotton wadding, and a bandage, and the patient was removed to his ward.

For several days the man suffered considerably from flatulence and colicky pains in the abdomen, which were due apparently to the liquid diet to which he was restricted, and he was restless and impatient of restraint. He slept, however, without anodynes, and his pulse never rose above 80. The local management of the wound was conducted exactly as in the previous case; the outer pad of carbolic lint being changed daily; the inner one never disturbed, but well covered with fresh oil at each dressing.

On the 10th of April, four days after the operation some sero-purulent-looking moisture was for the first time observed along the lower edge of the under piece of lint. On the 11th this appearence was somewhat more marked. On the 12th the whole of the lint was removed, and the wound exposed to view, under the protection of carbolic oil, with which the surface was smeared. The whole of the incision had healed, except about half an inch at the upper end, where the margins gaped and exposed a small cavity, from which about thirty drops of thin pus could be pressed. The deep parts appear to be soundly healed, and there was no sign of inflammation beyond slight redness of the skin over the parts covered by the carbolic oil. All the sutures were removed, and the part dressed as before. Each day after this the lint was taken off and the wound examined. Sometimes half a drachm of thin pus could be pressed out, and sometimes there was none at all. Except that the superficial sore did not heal, everything was as satisfactory as possible. Presently it became obvious that the carbolic oil was acting as an irritant to the skin around and to the sore itself, which latter increased in size, and undermined the line of recently-formed cicatrix.

As it was quite evident that the deep parts were soundly united, I laid open the undermined cicatrix, discarded the carbolic oil, and dressed the sore with wet lint and gutta-percha tissue. It quickly began to cicatrise. The patient was allowed to get up and walk about, and on the 15th of May he left the hospital cured, the aneurismal tumor having almost disappeared.

Before this case and the preceding one left the hospital I had the opportunity of showing them to Mr. Paget, of St. Bartholomew's, who expressed himself as much gratified in witnessing what he termed "these brilliant results" from the antiseptic ligature and dressings—results which, I venture to affirm, could not have been obtained by any other plan of treatment. And I would here record my obligation to the house-surgeon, Mr. Puzey, and to my clinical assistant, Mr. Matthews, for their zealous attention in carrying out honestly and faithfully the rules and principles required by this method. Without strict and minute attention to these it is worse than useless to attempt it; with such, failure must be the rare exception.

I would here briefly observe that the mode of dressing adopted, though very effectual in preventing the access of septic germs or matter, is by no means the best or the most favorable for the healing of an open wound. It was employed only on account of its great simplicity, and because I could rely on it (with the materials at my disposal) for securing the healing of the deep wound. The carbolic oil, strong enough to be thoroughly antiseptic, if constantly applied and renewed over a raw surface, is sufficiently irritating and caustic to prevent nearly all healing action in the parts with which it is in contact. The healthy skin can bear its action well, but a raw or grandulating surface will not cicatrise while thus constantly irritated.

Thus we may explain how it was that in the case of ligature of the carotid the wound healed entirely in a few days, without a single drop of suppuration; while, in the case of iliac ligature just narrated, a troublesome superficial sore continued for some time, and until, indeed, the carbolic dressing was discontinued. In both cases the skin was accurately brought together at every part by numerous points of suture. In the former, it continued in contact, and primary union was not disturbed by the caustic effect of the carbolic oil; in the latter, however, owing to the restlessness of the patient, or to the extensive division of the muscles beneath, the skin subsequently separated so far between the sutures at one part as to allow the carbolic oil to enter and come in contact with the open wound. It was an accident of no material importance, however, as it merely prevented the healing of the superficial parts.

The two greatest risks the surgeon has had hitherto to encounter in tying a great arterial trunk in the immediate vicinity of an aneurism are—1st, hæmorrhage from the distal end of the artery on the separation of the ligature; and 2ndly, inflammatory disorganisation of the aneurismal sac, consequent on the inevitable suppurative inflammation in its close proximity, which occurs when a ligature, containing an arterial slough, has necessarily to separate and come away. Both these risks are avoided by using the antiseptic catgut, and adopting the antiseptic treatment at the time of the operation and subsequently.

Mr. Lister's observations, published in The Lancet, very clearly show that there was no division of the artery in his case of ligature of the carotid in the calf; that the middle and internal coats were simply blended together, so as to obliterate the cavity of the artery, without any solution of continuity; and that the ligature itself had become organised, and formed a sort of living ferrule round the artery, continuous with its external coat.

The result of the cases I have narrated goes far to show that an exactly similar process takes place in the human subject; and if so, as there is no division of arterial texture, and no subsequent death of tissue, the risk of hæmorrhage is altogether avoided. So also, as there is no arterial slough to be detached and slowly separated by the process of ulceration, and no inorganisable foreign body, in the shape of a silk ligature, to irritate and excite inflammatory action, and as the entire wound admits of ready and immediate union, the principal causes of inflammation and disorganisation of the walls of the aneurism are also avoided.

The Hunterian doctrine and practice has been to tie the artery as far as practicable from the aneurism, because it was supposed that the coats of the vessel were probably diseased in its vicinity, and that here in consequence, a greater risk of hæmorrhage would arise on the separation of the ligature. The practice was correct; for by tying the artery near the aneurism, inflammatory disorganisation of its sac, and consequent hæmorrhage, were very probable, and certainly many deaths have in consequence occurred. The theory, however, was at fault, as has been shown by Mr. Syme, who, in his bold and well-conceived operations, has several times opened the aneurism, and successfully tied the artery immediately above and below the dilated portion.

In conclusion, I would here state that I regard the antiseptic catgut ligature and the antiseptic treatment, as applied in the deligation of the great arteries, as an immense step towards the perfection of our art. I have tied most of the great arteries in the human subject, many of them frequently and with at least average success; and I cannot but compare the anxiety with which I have watched the separation of the ligature and the inflammatory action necessary to this process, with the composure and perfect sense of security I have felt when witnessing the wound heal *at once*, without suppuration, without inflammation, and, above all, without a ligature to come away.

(To be continued.)

ON THE DIGESTIVE DERANGEMENT ACCOMPANYING THE SECOND DENTITION.

By Eustace Smith, M.D., M.R.C.P.,

Physician Extraordinary to His Majesty the King of the Belgians, Physician to the North-west London Free Dispensary for Sick Children, etc.

In children, the activity of the mucous membrane lining the alimentary canal is very remarkable. The secretion of mucus appears in them to be always in excess, as compared with the adult, and to be abundantly increased by the presence of the gentlest irritant. The stools of young infants are, in their natural state, composed in great part of mucus, and under the influence of any passing irritation this secretion becomes largely augmented; the stools consisting of that more or less intimate admixture of thick viscid mucus with fæcal matter which is known in nurseries by the name of "slime." In infants improperly fed, and whose bowels are therefore exposed to the constantly renewed irritation of undigested food, great quantities of mucus are often found in the motions in the form of strings and jelly-like lumps.

Again, the increased secretion of mucus may be the result, not of local irritation, but of sympathetic action set up in one tract of mucous membrane by the existence of a similar condition in an adjacent tract. Thus, in whooping-cough the stomach and bowels sympathise with the copious mucous flux of the bronchial mucous membrane, and themselves secrete an abundant thick mucus, which is vomited in large quantities at the termination of the characteristic cough, and is discharged from the bowels with the stools. After recovery from whooping-cough the derangement of the alimentary canal usually subsides; but in weakly children, or in children much reduced by the intensity or the long continuance of the disease, the excessive secretion of mucus is apt to continue, and to become chronic.

A chronic derangement of this kind is very frequently met with, and, by its influence in impeding general nutrition, often excites suspicions of the existence of tubercle. It is often found to accompany the progress of the second dentition; for although by no means necessarily excited by that state of natural development, yet there is no doubt at such times — owing to the intimate sympathy existing between all parts of the alimentary canal — a great tendency to increased activity of secreting function, and an increased susceptibility to disturbing influences.

A child in whom this derangement exists is noticed to be languid and dull; he is disinclined to exertion, and complains of weariness and depression. He grows pale; loses flesh; his skin gets dry and rough, so that by friction the epithelial scales can be rubbed off as a fine dust. He is often drowsy in the day, but is restless at night, grating his teeth; and his sleep is frequently disturbed by frightful dreams, from which he wakes in great terror, crying or talking incoherently. Nocturnal incontinuance of urine is also not unfrequently complained of, and this, although in the beginning only occasional, may afterwards become habitual. His appetite, at first unusually keen, becomes gradually capricious, then fails almost entirely, and each meal is followed, after some little interval, by flatulence and uneasiness. The appetite may, however, remain large even after the emaciation has become extreme, and in some cases the hunger seems almost insatiable, the child very shortly after a full meal asking again for food. The tongue is either deep-red, clean, and glossy, looking as if denuded of its epithelium, or is covered with a thin coating of transparent grey fur, with a slimy look, as if it had been soaked in mucilage, and having the fungiform papillæ at the sides of the dorsum, although not elevated, unusually large and well defined. The bowels are either constipated, or there are frequent scanty stools, containing large quantities of free mucus; and the evacuations are generally accompanied by much straining, and sometimes by prolapse of the bowel. It is not uncommon to find constipation and diarrhœa, alternating with one another. Thus, the bowels are confined for two or three days, or even for a whole week; a violent attack of purging then sets in, the bowels being opened ten, twelve, or even more times in the twenty-four hours; after which, the accumulation having been discharged, the bowels become again confined. Sometimes the breath is extremely offensive, especially in the mornings; and this is often dependent upon enlarged tonsils, which secrete a thick, bad-smelling, semi-purulent matter. The fetor of the breath may, however, be present although the tonsils are quite healthy. The complexion is often remarkably sallow, having a half-jaundiced tint; and the child complains of headache or of wandering pains about the chest or belly. The lymphatic glands of the neck are liable to become enlarged on the slightest irritation. They do not, however, necessarily suppurate or remain permanently swollen. The enlargement, after persisting for a variable time, may disappear completely. Night-sweating is a rare symptom; indeed, the skin is habitually too dry, and acts with very great difficulty. The temperature of the body is seldom elevated above the normal level.

The symptoms thus described do not progress in any regular manner from bad to worse. It is usually found that the child is subject every few weeks to what are called "bilious attacks" — to violent attacks, that is, of vomiting and purging, lasting often for two or three days, during which large quantities of mucus are got rid of. The system being thus relieved, the symptoms become for the time less severe; the child sleeps better at night, and during the day is less languid and more inclined to take exercise. The improvement is not, however, of long continuance; for the symptoms, returning, grow gradually worse until they culminate in another violent attack like the former. In this way the child may go on for months, getting gradually thinner and weaker, his condition exciting the gravest apprehensions amongst his relatives, especially as a short hacking cough is a not unfrequent symptom of this derangement, and increases their fears of the outset of consumption.

Worms, especially amongst the poorer classes, form a common complication of this derangement; in which case the symptoms are all attributed to the presence of the entozoa. The creatures find in the alkaline mucus a congenial nidus; but the disordered state of the mucous membrane is at least as important as are the parasites themselves, and until the alimentary canal is restored to a more healthy condition, special anthelmintics frequently fail of success. The difficulty so often experienced in curing a child of worms is due to a neglect of the measures necessary effectually to restrain this unnatural activity of the mucous glands.

It is easy to understand how nutrition must suffer in this disease. The mucous poured out into the stomach and bowels seem to act as a ferment, and to cause decomposition of the food with which it comes into contact. At the same time the alimentary masses, being enveloped by a coating of thick slimy matter, are prevented from being properly mixed up with the digestive fluids. A comparatively small part of the food which has been taken is therefore converted into a form in which it is capable of being absorbed; and of that small part a still smaller is actually taken up by the absorbent vessels, on account of the thick layer of viscid mucus which lines the walls of the bowel, and prevents the veins and the lacteals from performing their functions. The acid resulting from the fermentation of starchy food increases the consistence of the mucus by partially coagulating it; and the irritating action of the sour contents of the bowel upon the lining membrane excites further secretion from the glands. The large appetite so commonly found in these cases is, no doubt, in part a manifestation of the want of nourishment felt throughout the system; but it is probably also in part a morbid craving excited by the stimulating action of the fermenting contents of the stomach and bowels.

The symptoms by which this derangement may be recognized are: the slimy appearance of the tongue; the large quantities of free mucus in the stools; the great want of regularity in the progression of the symptoms; and the periodical occurrence of "bilious attacks." If these conditions are observed to follow an attack of whooping-cough, or to occur at the time of the second dentition — if they are accompanied by dry, rough skin, and sallow complexion — and if the temperature of the body is not raised above the natural level, — we may conclude that the illness is due to the cause which has been described.

Under proper treatment, children suffering from this derangement usually do well; although sometimes the fears excited by their gradually increasing pallor and weakness, and their progressive emaciation, are actually realized. Pneumonia attacking such patients is apt to be of the epithelial variety — the so-called scrofulous pneumonia; and the deposit, after remaining unabsorbed for a variable time, generally undergoes disintegration, forming one of the many varieties of pulmonary phthisis. If the formation of grey tubercle occur at all in such cases, the coincidence must be looked upon as accidental, for the disease in question is quite distinct from the tuberculous diathesis and independent of it.

In the *treatment* of this derangement, the mucus already secreted must be cleared away by a purgative of rhubarb and jalap. After which, various measures must be resorted to for restraining the excessive secretion of mucus, and for restoring healthy nutrition. This is to be done by a strictly regulated diet and by a careful hygiene, at least as much as by the administration of medicines. All articles of food must be forbidden in which fermentation can be excited by the presence of the alkaline mucus; and therefore farinaceous matters, sugars, and fats should be rigidly excluded from the diet. The child should be fed as nearly as possible upon meat, eggs, and milk. It is true that bread can seldom be entirely dispensed with, but what little is allowed must be eaten stale or well toasted. Too much food must not be given at once, for all overloading of the stomach is to be avoided. It is better to distribute the amount allowed over four meals rather than three, and these should be fixed at regular intervals throughout the day. When the derangement has existed for some time, and the general nutrition of the body is much lowered, the appetite usually fails. In these cases it is often difficult to persuade the child to take nourishment, especially as his chief craving is for bread-and-butter, potatoes, and all the different articles of food which are particularly injurious. Meat is often extremely distasteful to him. A lark or a snipe will, however, by appealing to his fancy, sometimes overcome this dislike; and every means should be tried, by varying his diet within the prescribed limits, to induce him to take a sufficient quantity of food. At the same time, the patient should be warmly clothed, and should take plenty of exercise in the open air. If the weather be mild, almost the whole day should be passed out of doors. The child should wear a shirt and drawers of flannel, and his belly should have the additional protection of a broad flannel belt. To restore the proper action of the skin, the whole body should be sponged with tepid water in a bath every morning, and should be afterwards well rubbed with towels or a flesh-glove until the skin is all aglow. The frictions may be repeated, without the bath, in the evening before going to bed. In cases where the skin is particularly dry and shrivelled-looking, Dr. Andrew Clark recommends that a warm bath should be taken at night, and that the body should then be freely anointed with oil. Under such treatment the skin quickly recovers its natural appearance, and becomes soft and supple. The above measures — even if no medicines have been given at all — will, after a very short time, produce a marked improvement in the appearance of the child. The stoppage of starchy food, and especially of potatoes, will by itself remove a great many of the more distressing symptoms; the restlessness at night, in particular, usually ceases at once. There are, however, certain medicines which should not be neglected; but those most calculated to assist the object we have in view are not those which, under the name of *tonics*, are usually resorted to when from any cause healthy nutrition of the body appears to be in abeyance. The best tonic is nourishing food. But that the food taken may be nourishing, it must first of all be digested; and those medicines will be therefore the real tonics which enable the alimentary canal properly to perform its functions. Our object is to check as rapidly as possible the excessive secretion of mucus, which prevents the food from being sufficiently mixed with the digestive fluids, and impedes the action of the absorbent vessels. Various medicines will accomplish this result. Thus, alkalies not only appear to have an influence in arresting the secretion of mucus, but also, by at once neutralizing any acid formed by the fermentation of food, produce a rapid change for the better in the general symptoms. The best form in which they can be given is the bicarbonate of soda with a bitter, as the infusion of calumba. To each dose may be added half a grain of iodide of potassium, to increase the salivary secretion, and twenty drops of the tincture of myrrh, which is found to have a powerful bracing effect upon the mucous membrane. The mineral acids—at any rate in severe cases of this derangement—often appear to be rather injurious than beneficial; certainly the improvement under their use is not nearly so rapid as in cases where alkalies are used. The influence of the latter in improving the appetite, when that is failing, is most marked, especially if a drop or two of dilute hydrocyanic acid be added to each dose of the mixture, and will often succeed when dilute nitric acid has been given without any effect. Aloes is also a most valuable medicine. Under its use the amount of mucus appearing in the stools diminishes rapidly, the digestion improves, and all the symptoms showing irritability of the nervous system—such as restlessness at night, bad dreams, startlings, grinding of the teeth, moroseness and ill-temper—quickly subside. The effect upon the rest at night is usually most marked, the child beginning to sleep soundly after only a few doses of the drug. Aloes is most conveniently given in the form of the compound decoction, in doses of two tea-spoonsful three times in the day, for a child of seven years old. In such quantities it does not act as a purgative, but merely produces a tonic effect upon the bowels, checking immoderate secretion. Decoction of oak-bark, in half-ounce doses, will also be found of service.

In cases where the emaciation and debility are very decided, iron may be combined with the special treatment; for although tonics, when given alone, are found to be of slight advantage so long as the functional derangement of the alimentary canal continues marked, yet in combination with medicines directed especially to rectify that derangement, iron is often of much use. Thus, the ammonio-citrate of iron may be given with aromatic spirits of ammonia in the alkaline mixture, or a teaspoonful of iron wine may be added to each dose of the decoction of aloes.

While these medicines are being taken a purgative of rhubarb and jalap should be given fasting twice a week. Afterwards, when mucus has ceased to appear in the stools, and all symptoms of digestive disturbance have disappeared, quinine, the mineral acids, cod-liver oil, &c., may be given, if they are thought to be required; but these are seldom necessary to complete the cure.

George-street, Hanover-square, May, 1869.

CASES OF ACUTE RHEUMATISM TREATED PRINCIPALLY BY THE ALKALINE METHOD.

By Charles H. Robinson, L.K.Q.C.P., & M.R.C.S.I.,

Demonstrator of Anatomy to the Ledwich School of Medicine; late Medical Officer to the Peninsular and Oriental Company; etc.

The treatment of acute rheumatism has lately been subject to a good deal of discussion, since the communication brought forward by Drs. Gull and Sutton before the members of the London and Chirurgical Society in January last, on the supposed inefficiency of medicine in this disorder, and their firm reliance on mint-water and cotton wadding in its management. I am, however, convinced that any unprejudiced observer who carefully examines the statements brought forward by Drs. Gull and Sutton, will find, in the results obtained, a material difference from what those gentlemen would lead us to believe; and that their theory was unmistakably refuted by Drs. Fuller and Dickinson.

For my own part, I am a firm believer in the alkaline treatment of acute rheumatism; my chief reason for this belief being the satisfactory results obtained by this method far beyond any other, not only in the duration of the disease, but also in the almost total absence of pericarditis and valvular affections of the heart.

The following cases came under my notice when medical officer to the Cape mail steamers and Peninsular and Oriental Company, and I adduce them for several reasons. They all occured at sea, and therefore were necessarily exposed more than on land to relapses. Some of the patients were passengers, some seamen; but, with one exception (Case 1), I had each under my observation from the very commencement of the affection, and long after it had terminated. In each the heart was carefully examined at regular intervals, and in none of the six cases was it ever implicated.

In 1862, Dr. Dickinson read a paper before the members of the Royal Medical and Chirurgical Society, in which 48 cases of acute rheumatism were treated by full doses of alkalies (four drachms to the ounce and a half daily of the salts of potash or soda), and in only one of these 48 cases was there any cardiac affection. These facts prove that by no other method can we expect such gratifying results as by the alkaline mode of treatment.

Of the following cases, five were articular, the remaining one a case of muscular (fibrous) rheumatism.

Case 1.—George D———, Esq., aged thirty-three, applied to me on the 7th November, 1862, suffering from acute rheumatism of the finger-joints, shoulders, and hips, arising from a severe wetting received a few days before. Has had several attacks of rheumatism before. After a purgative was administered, I gave bicarbonate of soda in a mixture, dose two drachms three times a day, cotton wadding being applied to the swollen joints.

Third day.—Gave three grains of calomel last night, to be repeated every night until further notice. The heart was carefully examined, and found in a healthy condition. Fomentations of vinegar as hot as could be borne, with gutta-percha tissue external to the lint soaked in the vinegar, applied very often to the joints. Stomach a good deal out of order; tongue white; pulse 96; copious perspirations day and night, which make him extremely weak; urine reddish, with a heavy brick-dust sediment. His diet consists of tea, toast, soda-water to assuage the thirst, soup and broth; but his appetite is wretched.

Seventh day.—As the pains are still severe he was ordered ten grains of Dover's powder at bedtime; he is, however, somewhat improved.

Ninth day.—Up for one hour to-day. To take the calomel only every second night. Allowed a glass of sherry with water to-day.

Tenth day.—Gave the bicarbonate of soda in effervescence with tartaric acid, and stopped the calomel.

Thirteenth day.—Urine clearing daily; pulse 80. Soup and boiled mutton for dinner. The joints are almost well.

Sixteenth day.—Urine clear; pulse 68. Stopped the tartrate of soda, and gave quinine with dilute sulphuric acid in two-grain doses twice daily.

Twentieth day.—Cured. To continue the quinine for a week longer.

This patient might have been well sooner, but his cabin was much exposed to draughts, and thus he often took fresh cold.

Case 2.—E. G——, aged thirty-eight, applied to me on Dec. 3rd, 1862, suffering from acute rheumatism of the fingers and neck. The urine was high-colored, and deposited a reddish sediment; perspiration copious and highly acid. He was at once ordered bicarbonate of soda in two-drachm doses twice daily in a mixture with a few grains of nitrate of potash; flannel applied externally. On the 9th the urine was natural the swelling of the joints had disappeared, the pain and fever had left him, and he was discharged cured.

Case 3.—On Feb. 10th, 1863, Mr. B——, aged forty-two, applied to me with both feet affected with acute rheumatism; they were greatly swollen and intensely painful. He was ordered at once the bicarbonate of soda in two-drachm doses three times a day. French wadding to be applied to the joints, and to take three grains of calomel every second night. On the 20th he was discharged perfectly recovered.

Case 4.—Mrs. S——, aged about forty-five, I saw on the 13th of February, 1863, suffering from acute rheumatism of the elbows, wrists, left ankle and foot. The same treatment was pursued as in Case 3, with the addition of iodide of potassium to the bicarbonate-of-soda mixture. This was an extremely severe attack,—great swelling of the joints, intense pain, copious perspirations, and highly acid urine; but on the 23rd of February she was discharged cured.

Case 5.—Robert W——, aged forty-nine, I saw on the 11th of July, 1864, suffering from acute rheumatism of the left knee-joint, and the fingers of the left hand. I gave bicarbonate of soda in the usual doses in effervescence, with tartaric acid, and two grains of calomel every night. Pulse 88; urine high-colored, &c.

Third day.—Somewhat better. The calomel only every second night. Fingers easier; knee much the same,—still much swollen, and extremely painful; flannel used externally.

Eighth day.—Knee wrapped up in cotton wadding, with gutta-percha tissue outside. As he did not sleep well last night, to take at bedtime ten grains of Dovers's powder.

Tenth day.—Better. Changed the bicarbonate of soda for the bicarbonate of potash. Urine still very turbid and high-colored, with heavy sediment.

Eleventh day.—Ten grains of Dover's powder at bedtime.

Thirteenth day.—Added small doses of iodide of potassium to the bicarbonate-of-potash mixture.

Twentieth day.—Calomel stopped. All fever has disappeared. The swelling of the joints has been removed; but being stiffish, he was ordered some soap liniment (an ounce), with tincture of opium (four drachms), to rub the affected parts.

Twenty-fifth day.—Discharged, cured.

This patient was one of the seamen, and persisted in remaining on duty all the time, exposed to every sort of weather both day and night aboard the ship.

Case 6.—William M——, aged twenty-nine, I attended on the 8th of April, 1865, for acute rheumatism, of the muscular or fibrous character. It was fugitive, flying from one place to another; the urine was reddish, and the pulse feverish. Compound camphor and soap liniments, combined with tincture of opium, were applied locally; and five grains of iodide of potassium were administered every fourth hour. On the third day he was somewhat better, but suffered a good deal of pain. The urine was still of a reddish color. The iodide of potassium was stopped, and the bicarbonate of soda was given in two-drachm doses, three times a day; ten grains of Dover's powder at bedtime.

Fifth day.—The bicarbonate of soda changed to the bicarbonate of potash (half an ounce daily); urine clearing; another dose of Dover's powder (ten grains) at night.

Eighth day.—Takes the potash in effervescence with tartaric acid; pains much less; urine almost natural.

Twelfth day.—Urine natural; pulse regular; pains disappeared. Discharged, cured.

Duration of cases.—Case 1 lasted twenty days; Case 2, six days; Case 3, ten days; Case 4, ten days; Case 5, twenty-five days; Case 6, twelve days: making a total for the six cases of eighty-three days. Thus it will be seen that the average duration of the above cases was a trifle under fourteen days each; or, excluding the sixth case, which was not articular rheumatism, the five cases will show an average of 14 1-5 days each—a great improvement, I take it on the old-fashioned treatment of rheumatism—namely, flannel and six weeks.

Dublin, June, 1869.

CLINICAL NOTES.

IV.

WASTING OF THE MUCOUS MEMBRANE; ATROPHY OF INTESTINAL VILLI; CHRONIC DIARRHŒA.

By S. O. Habershon, M.D.,
Physician to and Lecturer at Guy's Hospital.

The villi of the intestinal mucous membrane are the rootlets by which absorption takes place into the living organism. They constitute a most important link between the external and the internal structures. The nutrient material may be properly prepared by the action of the stomach, and by the chemical reactions of the glandular secretions, which aid in the process; but unless the fluid be absorbed into the system, it is perfectly inadequate to fulfil the fuller purposes of growth and repair. It is true that some absorption may take place by means of the capillaries of the intestine and of the stomach, but this absorption will not suffice to sustain the body. Thus, in organic obstruction at the outlet from the stomach—the pylorus,—wasting takes place, although the nutrient chyme is exposed to the absorbent surfaces of the capillaries and veins. Where no such obstruction exists, and the chymous fluid is still further prepared for absorption by the action of the pancreatic and biliary secretions, unless the villi absorb the fluid into the system, that fluid is comparatively valueless. But, even after the villi have fulfilled their office, disease of the lacteal glands in the mesentery, or pressure upon the thoratic duct, may hinder the entrance of the chyme into the system, and produce progressive emaciation. These latter instances of disease constitute as distinct a class as the former, and they are alike foreign to the subject under consideration.

The villi of the intestine are complex organisations. They consist of a lacteal vessel with minute capillaries connected with the venous and arterial systems; these structures are surrounded by basement membrane covered with columnar epithelium. The function of the villi is a process of growth by which the chyme becomes absorbed into the interior of the lacteal prior to its further elaboration into chyme, and its more complete preparation for the supply of the wants of the system through the blood. Non-action of the villi is necessarily followed by wasting of the body generally, for there is no other adequate means by which nourishment can enter the system.

Some months ago I was asked to see, in consultation, a lady who had resided for several years in India, but who had several times been com pelled to return to England from attacks of severe diarrhœa. These attacks were spread over a period of about ten years, and her strength was still further exhausted by child-bearing. Two months after her last return from India her confinement was followed by another attack of diarrhœa, and at the time of my visit this symptom had persisted for nearly two months. She was then in a state of extreme prostration; countenance sallow, almost the bronzing of Addison's disease; the conjunctiva was white and pearly, and there was no pigmental deposit about the gums or lips; the skin was cool; the tongue pale; pulse scarcely to be felt, and extremely compressible; the heart's action very feeble; there was no cough nor evidence of phthisical disease; the abdomen was moderately distended, with occasional pain, but this was never very severe; the liver could not be felt; the urine had no unhealthy reaction; the evacuations from the bowels were loose and bilious, but did not contain any blood, nor was there any evidence to show that blood had ever been passed. There was loss of appetite, and the stomach was very irritable. Her principal symptoms were great exhaustion, irritability of stomach, and diarrhœa. The diagnosis had varied with every successive change of the physician. By one, the symptoms were referred to dysentery from her residence in India; by a second, to disease of the liver; by a third, to disease of the colon, with or without ulceration. Mercurials and astringents had been given, but without any beneficial effect. The patient rallied, however, under the use of tonics and sustaining diet, and gained strength considerably. Three months later, diarrhœa with vomiting came on again very severely, and she slowly sank. I saw her then only in a dying state.

An inspection was made by my colleague, Dr. Moxon. The lungs were small and collapsed, but quite free from disease; the heart was wasted; the abdomen was collapsed; the intestines shrunk and nearly empty; the peritoneum was free from disease, being quite smooth and healthy; the liver was small, and the gall-bladder distended; the mesenteric glands, the spleen the supra-renal capsules, and the kidneys, so also the ovaries and uterus, were healthy. The whole length of the alimentary tract was examined, but neither ulcer nor cicatrix could be found. The walls of the intestine were extremely thin, and were semi-transparent. Both the muscular and mucous coats were greatly wasted; this was especially manifest with the villi, which were extremely small. Microscopical examination, however, failed to detect anything beyond simple atrophy of these structures. Peyer's glands were normal.

The inspection at once set aside the idea of disease of the liver, of old dysentery, or ulceration of the colon; and showed the case to be one of *atrophy of the mucous membrane* and of the *intestinal villi*. Wasting of the mucous coat of the ileum and jejunum is observed in cases of phthisis; but this patient had none of the symptoms of that disease, either in the presence of tubercle in the lungs or in the mesenteric glands. In phthisis, during the progressive atrophy of the disease, there is both loss of appetite and diarrhœa, and in many instances there is pain; but the wasting is accompanied with ulceration of the intestine. As one of the sequelæ of dysentery, atrophy has been often observed; but cicatrices give the proof of former ulceration. Again, in lardaceous disease of the mucous membrane of the stomach and intestine, there is also loss of appetite and diarrhœa; but the mucous membrane appears thickened, it is discolored when iodide is applied, and under the microscope the disease in the minute capillaries is readily detected.

The cases to which the one mentioned bears the closest resemblance are those in which diarrhœa and wasting occur in strumous subjects after muco-enterites, or after exanthemas. In them the diarrhœa may be progressive, and tend to fatal exhaustion, *without any ulceration* whatever; and the food may be passed through the intestine unabsorbed, and almost unchanged. The disease is essentially one of atrophy; but whether dependent upon organic change in the villi or lacteals, or in the vaso-motor nerves of the abdomen, we cannot determine. In Addison's disease of the supra-renal capsule, with bronzing of the skin, the irritability of the stomach may be present with diarrhœa, without any ulceration. That disease is essentially atrophic in character, and it is connected with a disturbed condition of the abdominal nerves; but, in the case referred to, the supra-renal capsules were sound.

The fact, however, is a very important one, that an atrophic state of the structure of the mucous membrane may be the only change recognised in fatal diarrhœa; and it is equally important to know that this state is likely to be relieved, not by opiates and astringents, which may be most valuable in some forms of disease, but by those agents which afford nourishment to the system and are readily absorbed. Many patients are relieved by cod-liver oil, by cream, by ordinary milk, by asses' milk, by the preparations of steel, &c. Rest in a recumbent position must be maintained. If the diarrhœa be accompanied with pain, opium or morphia may be required; but as long as the disease is regarded as one of simple ulceration of the small or large intestine, nourishment, which is the most effectual mode of relief, is neglected, because the true nature of the disease is not recognised.

Brook-street, May, 1868.

OBSERVATIONS ON THE REFORM OF MEDICAL EDUCATION.

By Professor Syme.

Of late years there has been a growing conviction that medical education is not what it ought to be; and it was, no doubt, under this impression that the Medical Council last year appointed a committee to inquire into the subject by obtaining the opinions and experience of gentlemen engaged in teaching the various departments of medical science. The information thus obtained has now been printed, and a report is in preparation by the Committee containing proposals suggested by this evidence, which it will be the duty of the Medical Council to consider.

On the perusal of this evidence, it has occurred to me that there is some chance that the Committee, guided by it, may overlook some of the great difficulties of the question, and may suggest alterations which, if carried into effect, would do little in the way of remedy. I take the liberty, therefore, of submitting to the profession the following observations.

During the last half century there has been an immense development in all the departments of medical science, while the period of professional study has remained very nearly, if not quite, the same as it was previously. The consequence is, that what was formerly attained through real learning or mental appropriation on the part of a student has now for its substitute a process of cramming, or, as it is called, teaching, which, being merely an affair of memory, suffices for nothing more than the purpose of passing examinations, and is apt to leave little or no permanent advantage. Such being the case, it is obvious that merely changing the order in which the departments of study are now taken, or splitting them so as to add to their number, would hardly accomplish the object in view, which is, to increase the proportion of time for real study.

For this purpose there are only two modes of procedure open for adoption: one of these being to lengthen the periods of education, say from three or four to eight or ten years; while the other is to limit the extent of information to be required from candidates in each department of their studies, whether for obtaining a licence or degree. The first of these plans is so beset with inconvenience that it may safely be deemed impracticable; while the second, although at first sight probably appearing injurious and retrogressive, may nevertheless, when more carefully considered, be found, not only to be free from objection, but to promise much advantage.

When the real object of medical education is kept in view, it does not seem desirable that the students should be thorough chemists, anatomists, or physiologists; all that is required being that they should possess a sufficient acquaintance with these subjects for the practice of their profession. But it is well known that every teacher now considers it his duty to go over all that he knows of the subject committed to his charge, just as if his pupils had no other claim on their attention, either at present or in prospect; while, if the same teacher has to examine them, they must cram their memories with answers to his questions instead of assimilating, or really learning, any true knowledge of the subject.

In these circumstances, as it is obviously impossible to circumscribe teachers within prescribed limits the most effectual plan would seem to be, proviiding a catechism for each subject, containing questions merely to the extent of the information necessary for medical students. For the construction of these books committees of the Medical Council might be formed, who, together with teachers of recognised repute, could discharge the important duty thus proposed.

In addition to the advantages that would proceed directly from such a plan, there is another, of no small importance, that may be mentioned, which is, the prevention of students being examined mainly by their own teachers, especially by those who let it be known that they will require the answers to their questions to be in strict conformity with the views expressed in their lectures. It is well known that when such is the case students will frequently attend lectures without any expectation of benefit, and merely to propitiate their examiners.

There is still another advantage that would result from the plan just proposed, which is, putting an end to the baneful system of certificates for attendance. At no very distant period evidence of attendance was not required at all; and having had some connexion with its establishment, I may relate the circumstances that led to it, so far as I am concerned. Before my appointment to the chair of Clinical Surgery in the University of Edinburgh, and while still an extra-academic lecturer, I had offers made to me of fees from students who had not attended my lectures, or even been in Edinburgh when they were delivered. Shocked at these proposals, and indignantly declining them, I feared that in other quarters they might meet with a more favorable reception, and therefore advised the Royal College of Surgeons of Edinburgh that all students desirous of obtaining their diploma should enter their names at the College hall, together with the tickets of admission to lectures which they had procured for the session about to commence, at the same time paying five shillings for a registration ticket that would afford admission to the very valuable pathological collection belonging to the College. This plan worked extremely well, and may have given rise to a requisition that emanated from London, and required certification of attendance upon each subject mentioned in the curriculum. The Senatus Academicus of the University of Edinburgh, in order to discharge the duty thus imposed upon them with truth and accuracy, adopted various means, such as calling cards, and reading the roll, which have proved so unsatisfactory that the certificates required have never been given with any feeling of certainty as to their being well merited. In other schools, there is reason to believe that there has been greater laxity, so much so, indeed, as to make the whole system deceptive. The feeling of teachers is therefore understood to be generally opposed to the system of certifying attendance which, by leading students into habits of deceit, is calculated to injure the honorable feelings of youth. But even if attendance could be accurately ascertained, evil instead of good, I apprehend, would be the result; since I have always observed that, if students felt they were obtaining advantage from lectures, they attended regularly without any compulsion, and that when forced to do so contrary to their inclination it might be easily seen that, although their bodies were present their minds were absent, and consequently not within reach of instruction. Now, considering the short period devoted to medical education, and its overcrowded state from the number and importance of the subjects contained in it, it will be obvious that such unprofitable attendance must not only be useless, but positively a waste of time. It is well known that in all boards of examiners there are some more strict than others, and it has hence been deemed very desirable to devise means for insuring the protection of candidates, but hitherto it has been found impracticable to do so; and a further advantage of the catechism system would be its doing away with any complaint on the ground of inequality, since, as the questions might be the same, it would only be requisite to record the answer.

On all of the grounds that have been mentioned, the plan which I have proposed seems worthy of consideration; and, in the next place, I may mention some of the objections which will doubtless be urged against it. In the first place, it may be said that restricting the knowledge of a science within set bounds must injuriously limit the extent of its study, and thus retard its progress; but it should be recollected that eminence in science cannot be obtained directly from teaching, and rather requires a foundation of good principles, together with individual talents, inclination, and energetic exertion,—there being on the contrary, nothing more opposed to real success than the pedantic drilling of men whose character depends more upon specious talking than real knowledge. The next objection to be encountered will be the great trouble and expense requisite for preparing the different catechisms required; but these could hardly exceed those successfully overcome in rendering the British Pharmacopœia agreeable to all parties; and I have not the slightest doubt that the object in question would be accomplished before the end of many months, especially if, as it would probably better be, confined to the scientific departments of medical education. With regard to the examinations on practical subjects capable of demonstration, I need hardly say that these ought to be as practical and demonstrative as it is possible to render them, otherwise there is danger of the continuance of the baneful system of cramming, against which it is one of my chief objects in these observations to protest.

However averse to certificates for attendance upon lectures, I still think that candidates for a licence to practise should be required to produce evidence of having resided, duirng the period allotted for education, in one of the great medical schools provided with a large hospital, dissecting rooms, laboratories, and all other requisites for professional study; and also to produce tickets of admission at the commencement of each session to the various classes mentioned in the curriculum, according to the order there suggested. The great objection to provincial schools is, that the number of their students does not afford the teachers sufficient stimulus for devoting their attention to one subject of instruction, or regarding it merely as a step to something better; while the students are too few to give the excitement which the late Sir William Hamilton was wont to call the mesmerism of numbers, and which is so important for success in teaching.

Edinburgh, June 1st, 1869.

ON THE USE OF CARBOLISED CATGUT LIGATURES.

By James Spence, F.R.S.E.,

President of the Royal College of Surgeons of Edinburgh, Professor of Surgery in the University of Edinburgh.

The success attending the employment of carbolised silk ligatures has lead to the anticipation of still greater success by substituting catgut for silk. As the catgut ligature has recently been so prominently before the profession that others might, like myself, be induced to try it, I feel it my duty to publish the results of a case in which I used that material, and which show it to be by no means free from danger.

Having occasion, on Wednesday, the 12th May, to tie the right common carotid artery, I determined to use the carbolised catgut ligature so strongly recommended by Prof. Lister, of Glasgow. To give the method a fair trial, I had some catgut prepared for the purpose; but not being satisfied with it, I obtained a carbolised catgut ligature from Prof. Smye's department of the hospital, as I knew it had been used there in cases of amputation, and was prepared according to Prof. Lister's plan. The ligature was a fine one, firm and even in structure; and before using it, it was dipped into the ordinary weak carbolic solution to render it pliable.

I exposed the artery very carefully below the omo-hyoid, and passed the ligature round the vessel with the least possible disturbance of its connections. I was most particular in tying the artery. I tightened the first noose of the reef-knot firmly with the points of my forefingers, and withdrew them along the ends of the ligature so as to keep it firm; and still further to prevent all risk of the first noose slipping, I requested Mr. Annandale, who was assisting, to fix the knot by pressing on it with the handle of the needle, whilst I cast the second noose of the reef-knot and tied it. As I was to cut the ends of the ligature close to the knot, I took the further precaution of protecting the ends of the reef-knot by tying a third knot, close to which I cut off the ends of the ligature. The wound was then washed with carbolic-acid solution, accurately closed by points of suture, and a slip of lint soaked in carbolic oil was laid over it and fixed with strips of plaster. So specially particular was I in regard to the operation that I did not even use the hospital sponges, but new sponges thoroughly steeped and washed in dilute hydrochloric acid, then in water, and lastly in a weak solution of carbolic acid. I mention these things to show that every possible precaution was used to give the method a fair trial.

The patient was very comfortable during the afternoon and evening succeeding the operation, and passed a good night, with the exception of sickness from the chloroform when he took liquids.

On Thurdsay morning, at half-past ten, I received a message to say that he had suddenly become comatose and paralysed on the left side. On my arrival at the hospital I found the patient quite unconscious, and his left arm and lower extremity paralysed. My resident surgeon, Mr. Barmwell, informed me that about nine o'clock the patient asked the nurse for a draught of milk, after taking which he vomited; and during the vomiting the nurse observed him move his limbs violently, and he then became insensible and palsied, as before mentioned. Sinapisms to the spine and cold to the head were applied, but remedies produced little or no effect except that the lower limb somewhat recovered its power of motion, not sensation. My opinion, from the symptoms present, and the mode of their invasion, was, that some diseased vessel at the base, or in the substance, of the brain had given way, causing compression or breaking up of the brain-substance on the right side, as this was likely enough to occur when, owing to the interruption to the circulation through the carotid, the blood would be thrown with increased force on the collateral branches.

The patient died on the morning of the 15th of May; and as I was anxious to secure the parts operated on before decomposition occurred, I had the wound in the neck enlarged, and removed them some hours after death.

On examining the carotid artery, I was not a little surprised to find that it did not seem in the slightest degree constricted at the point of deligation; in fact, at first I saw nothing which I could recognise as the ligature. On careful examination, however, I found that what at first seemed some lymph or tissue, was the catgut softened. The circle of the ligature had given way apparently on the side of the vessel nearest the trachea, the entire knot being connected with the end of the ligature which was visible. On looking at the ligature with a pocket lense, the texture of the catgut was distinctly seen, but it was so gelatinous and pulpy that it seemed as if it were cast in gelatine, and a portion removed for microscopic examination, when placed between two slips of glass, spread out like a fluid. The head was subsequently opened, and the brain examined, when an embolic clot was found plugging the middle cerebral artery.

Reviewing the case under the light thrown on it by post-mortem examination, I think there can be little room for doubt that the softened and altered catgut ligature had yielded during the vomiting, and that the blood-current in the carotid had forced the recent clot at the point of ligature into the cerebral arteries, causing embolism, and the fatal result.

I have had some experience in tying arteries in the human subject, and I at one time conducted a very extensive series of experiments on the effects of ligature of arteries on the lower animals; but I never saw a case in which the ordinary ligature of silk or linen thread yielded or slipped, and never knew of a case in which the constricting circle gave way as in this case. Under these circumstances, whilst I believe carbolised silk or linen thread may be perfectly safe, I cannot avoid the conclusion that catgut, however prepared, is liable to become altered, softened, and disintegrated by the heat and moisture of the living tissues around it, and thus allow the deligated vessel to become again permeable. I learn also that, in a case of amputation of the thigh in which the femoral artery had been tied with catgut hæmorrhage occurred from the ligature slipping off.

Ainslie-place, Edinburgh, May, 1869.

ON THE TREATMENT OF SCURVY BY THE BINOXALATE OF POTASH.

COMMUNICATED BY

W. H. TAYLER, M.D.,

FROM OBSERVATIONS MADE IN THE ARCTIC REGIONS BY

J. W. TAYLER, F.R.G.S., F.G.S.

In 1854 and 1855, my brother, Mr. J. W. Tayler, was engaged at Evigtok, West Greenland, about lat. 61° 20, in working some lead mines, and had under his charge fourteen men. During that period all hands except himself and the steward were affected with scurvy. After exhausting his stock of lime-juice and citric acid, using up all his claret, jams, and everything that would be likely to be of service, he bethought himself of the fact that sailors, when suffering from the want of fresh meat and vegetables, take every opportunity, when they get on shore, of hunting for sorrel, and that those affected with scurvy rapidly improve under its use. As a chemist, Mr. Tayler considered what remedial agent the plant contained; and knowing binoxalate of potash to be present in it, he determined to try that salt. Having some oxalic acid and potash, he manufactured a compound of binoxalate of potash with an excess of oxalic acid, and commenced his treatment of the men laid up with scurvy. He gave four-grain doses three times a day. A rapid improvement followed: the men, though still living on the same diet, soon lost all symptoms of the scurvy; and all recovered except one man, who died after travelling seventy miles in an open boat, and when within sight of the vessel which was to take him home, he being unable to bear the exposure and fatigue of the journey. All the men were affected with scurvy in its most virulent form.

In 1865, Mr. J. W. Tayler went to Exeter Sound and there landed his men and stores for the purpose of forming a settlement for whale fishing.

In 1866–67, though there was a fair supply of preserved meat and vegetables, lime-juice, pickles, &c., several of these men became affected with scurvy and two died; but the binoxalate of potash treatment was not adopted, the medical man then in temporary charge preferring the usual remedies.

In 1867–68, many of the men were suffering from scurvy, and after trying lime-juice and other remedies without much improvement, the binoxalate of potash was given; the scurvy was soon checked, and all the men recovered. Occasionally the salt was discontinued, and the men at once retrograded; and they had such implicit faith in its prophylactic properties, that on the least symptoms of scurvy showing themselves, they came and asked for a powder of the binoxalate which they took in the form of lemonade.

From the above facts, we appear to have in the treatment of scurvy a most valuable agent in the binoxalate of potash with oxalic acid. It is easy to obtain, can always be made of a uniform strength, its purity can be depended upon, it does not deteriorate by keeping, and is very inexpensive. It is also contained in the juices of many plants, particularly in the expressed liquor of the rhubarb-leaf, which made into a syrup or extract would probably answer well. Should a more extended trial by others prove it to be as successful a remedy as it was in the hands of Mr. J. W. Tayler, the boon to sailors would be great. In the navy and mercantile marine, it would not only save many valuable lives, but thousands of pounds, now almost uselessly expended in badly preserved meats and vegetables and adulterated lime-juice. Mr. Tayler found that no consumable amount of preserved meat was equal to fresh meat as a health-sustaining diet, and the men were so eager for fresh meat that they often preferred bear to the preserved meats supplied in tins.

I will conclude my remarks by giving some of the symptoms noticed by Mr. J. W. Tayler in the men affected with scurvy. The men complained of languor and restlessness, were melancholy and low-spirited, and their appetite was capricious; they had aching pains down the front part of the legs, particulary on retiring to rest; small petechial spots appeared on the inner and lower third of the legs, spreading more or less rapidly, and forming large patches the color of port wine, there was also tenderness of the teeth and gums. As the disease progressed, the breath became foul; spongy, fungoid, bleeding excrescences appeared about the gums and palate; there was great tenderness of teeth, and inability to eat hard food, such as biscuit; the teeth became loose and fell out; general œdema existed; they were unable to walk without support; softening of the finger-nails took place, they becoming quite pliable; there was very great unwillingness to move about or assist themselves in any way, and they got discontented and very desponding; great debility came on, the body rapidly emaciated, giving off a most foul stench, and pediculi were frequently numerous. The patient may die on any sudden exertion or gradually sink. In fatal cases, many go on for four or five months; but some slight cases recovered in a few days under the binoxalate of potash.

From the foregoing results I would draw the following conclusions:—

1st. That scurvy arises in a great measure from a deficiency of albumen in the blood.

2nd. That the diet of sailors and persons who suffer from scurvy contains little albumen, or albumen difficult to be dissolved and taken up.

3rd. To prevent scurvy we must give some easily-digestible albuminised food.

4th. All or most of the albuminised food taken must be made use of, which at present, in salt beef as supplied to merchant ships, which has been, perhaps, several voyages, and repickled over and over again, cannot be without the aid of some solvent.

5th. As an additional albuminised food I would, till improved preserved fresh meat be introduced, give occasionally each sailor a certain quantity of the uncooked white of egg, which, by the addition of a very small portion of salt, and put into bottles or kegs, can be kept good for a length of time.

6th. As a solvent I would give the binoxalate of potash, which would add to the power of the gastric-juice, and dissolve out more of the albumen from the salt provisions.

Tudor House, Anerley, April, 1869.

ON THE
ARSENICAL TREATMENT OF PHTHISIS.

By T. F. Sanger, M.R.C.S.,

Surgeon to the Convalescent Hospital, Seaford.

About a year ago I had a case of phthisis under my care. The patient was a man aged twenty-eight, in whom the disease was hereditary, and two of his brothers had died of it. He was then taking citrate of iron and quinine, with iodide of potassium and cod-liver oil, from which he seemed to derive little benefit. Some spots of eczeme appearing on the neck and chest, I substituted five minims of the liquor arsenicalis for the iodide of potassium in the iron mixture, and after he had taken it two or three weeks I was very much pleased to find that, although the eczema was not cured, his chest symptoms were much relieved, as he breathed more freely, his cough was less troublesome, he had gained strength, and increased in weight. Instead of succumbing to the disease as his brothers had done, he gradually improved, and when the cold weather set in he procured admission to a consumption hospital, where he remained two months. He came out in March, rather weaker than when he went in. I put him again upon the arsenical treatment, and it has brought him back to about the same state of health he was in when he left for the consumption hospital.

In The Lancet of November 21st, 1868, there is an article on the administration of arsenic in consumption, which contains an abstract of the reports of MM. Hérard and Moutard-Martin on the therapeutical use of that drug: I therefore determined on giving it a further trial.

A large percentage of the patients sent to the Convalescent Hospital are cases of incipient phthisis, and a few (although it is contrary to the rules of the institution) are patients in whom the disease is more advanced. These, in addition to my own private and parish patients, afforded me a good opportunity of testing the value of arsenic in arresting the progress of the malady. I cannot give the details of every case treated by the arsenic, but in almost every one the patients derived benefit from it; and several that I thought were hopeless improved beyond my most sanguine expectations.

I generally administer the arsenic in five-minim doses of the liquor arsenicalis, or solution of the arsenite of soda, twice a day, combined with a drachm of the citrate of iron wine, or five grains of the citrate of iron and quinine: and I am very particular in directing the medicine to be taken soon after a meal, and that it should be discontinued if any irritability of the stomach or bowels comes on during its administration. In some cases, especially where the patients are not able to tolerate any preparations of iron, I combine the arsenic with the hyposulphite of soda in doses of fifteen to twenty grains.

Martha S———, aged twenty-three; incipient phthisis, slight hacking cough,not much expectoration, dullness on percussion over the apices of both lungs, very anæmic, skin and conjunctiva a dirty-yellow color. Says "she has been ailing for two or three years; has taken a great deal of medicine, but cannot tolerate steel." She commenced taking five minims of solution of arsenite of soda, with fifteen grains of hyposulphite of soda, the first week in April; took the medicine up to the 28th May, when she was discharged cured.

John H———, aged thirty-four, lived for some years in a malarious district, near a tidal river; has suffered from dyspnœa, cough, and emaciation for two or three years, during which time he has been unable to do any kind of work, and has been for some months a patient in the Brighton Hospital. He commenced on the 20th January to take five minims of Fowler's solution, with one scruple of the hyposulphite of soda, twice a day. He continued to take it up to the 10th of April, when he was returned as cured. He resumed his employment as farm laborer, and has been at work up to this date.

The situation of the Convalescent Hospital at Seaford is very favorable for the treatment of the early stages of consumption, and it may therefore be said that the success of the treatment should be partly attributed to the healthiness of the place. Seaford is remarkably dry, the subsoil being chalk or porous sand; consequently, there is very little surface evaporation, and after the heaviest rains the roads are free from mud and dirt. The country rises gradually behind the town to the breezy Sowthdown hills, and is defended from the north and east winds by the Beachy Head range of cliffs, which rise to a height of between 600 and 700 feet. The drainage of the place is now as perfect as in any town in England, the sewage being discharged into the sea at a part remote from any dwelling, and in a way which prevents its interfering with the comfort of bathers.

The city of Salisbury, when I lived there, thirty years since, was called "the sink of Wiltshire, the close the sink of Salisbury, and the Bishop's palace the sink of the close." The death-rate was almost as high as in any city or town in England, ranging from 27 to 29 in 1000. Good drainage and a pure water-supply have reduced the general mortality 40 to 50 per cent. and lessened the deaths from phthisis (according to the statistics of Dr. Buchanan and Mr. A. Middleton) 50 per cent. If good drainage, by lessening surface evaporation, and purifying the atmosphere, reduced the incidence of death from consumption, just one half, in a city situated as Salisbury is, what is it likely to do for a town so healthily placed as Seaford, where the death-rate has deen as low as 13 in 1000 at a time when the two healthiest districts in England (Helstone and and Eastbourne) were 15 in 1000.

Seaford, May 28th, 1869.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimae et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.
—MORGAGNI *De Sed. et Caus. Morb.*, lib., iv. Prœmium.

GUY'S HOSPITAL.

CASE OF TETANUS, RAPIDLY FATAL.

(Under the care of Mr. JOHN BIRKETT.)

It fortunately happens that tetanus rarely causes death so quickly as in the following case. The probable explanation of the man's rapid dissolution is to be found in the depressed and worn condition of his general constitutional powers. Very little time was afforded to allow the medicines administered to exert their influence, and, in fact, they produced no appreciable effect whatever. The spasms commenced, as usual, in the muscles of the neck and jaw, on the fifth day after the infliction of the injury; and so rapidly did the disease progress that the man survived its first indications little more than twenty-four hours.

J. H——, aged fifty-seven, was admitted into a private room in Guy's Hospital on the 10th of February, 1869. He then stated that he had crushed his left index-finger between two ropes producing a compound fracture of the first phalanx, on the 4th of February. On the 8th and 9th, he attended at the surgery to have the finger dressed; and in the evening of the 9th, the fifth day after the injury, he felt stiffness of his neck, and his jaw became rigid. He had taken no solid food for four days.

Feb. 10th.—9.30 A.M.: When admitted he was able to walk with a little assistance; was perfectly sensible; his countenance had a peculiar fixed expression; his jaws were rigid and fixed, with a piece of wood between the teeth; his head was drawn back, but there was no. contraction of other muscles. He was at once put to bed.—11.15 A.M.: He has difficulty in swallowing; complains of pain in the small of his back, which is from time to time slightly arched by the contraction of its muscles. Pulse 80; respiration 24. He was ordered a solution of extract of Calabar bean in water, neutralised with liquor ammoniæ, for subcutaneous injection; and at noon five minims, containing one-sixth of a grain of the extract, was injected beneath the skin of the arm. To be fed with beef-tea, milk, and brandy.—1.40 P.M.: Has made two attempts to drink, each of which brought on spasms threatening suffocation. Pupils of normal size.—2 P.M.: One-third of a grain of the extract was injected as before. Pulse 110, full and jerking; respiration 34, irregular; expiration noisy; he has slept a little; has slight spasms every six or seven minutes; the masseters and muscles of the back of the neck are continually contracted; he keeps hawking up rather viscid saliva, and is in a profuse sweat. —4 P.M.: One-third of a grain of the extract was injected. A quarter of an hour afterwards the muscles of the back and thighs contracted strongly; pupils are not much contracted.—5 P.M.: One-third of a grain of extract. Being unable to swallow, he had an enema of beef-tea, opium, and starch.—7.45: Had a severe spasm, lasting two minutes, when he was almost exhausted. During that time the pulse rose to 140; respiration 40.—8.30: Half a grain of extract was injected. Spasm of three minutes, in which the respiration was chiefly affected. Enema of beef-tea repeated.—10 P.M.: One-third of a grain of the extract of Calabar bean, with one-third of a grain of morphia.—11 P.M.: Two-thirds of a grain of the extract. Spasms frequent, almost continuous. A block of ice was applied to the spine, which seemed to increase the spasms.—12 night: One and one-third grain of extract of Calabar bean.—12.20: He died, not during a spasm. The respiration ceased before the pulse. The muscles were all relaxed immediately after death.

Autopsy, fourteen hours after death.—Rigor mortis still present in lower limbs; upper ones rigid, but less so than lower. Lungs large, bloated with serum and blood in the dependent halves, so that large portions would almost sink in water. Heart contracted closely, but not very firm. Other organs healthy.

◆

LONDON HOSPITAL.

The following cases were at present in the hospital, under the care of Dr. Morell Mackenzie. For notes of them we are indebted to Dr. Woodman.

1. *Carcinoma of the larynx.*—G. P——, aged

forty-five, first experienced pain in the throat last October, with singing in the ears, and a constant desire to swallow saliva. The simple act of deglutition was painful; but there was little or no difficulty in swallowing food. He had an attack of hæmorrhage from the throat on the 3rd of February; but his disease was not recognized until a laryngoscopic examination was made, when there was discovered (April 1st) a slight irregular swelling of the left arytenoid cartilage, with a small dry ulcer in its centre. The cervical glands were slightly enlarged, but not at all painful. The lungs were quite healthy. Notwithstanding the actual very slight amount of laryngeal disease, Dr. Mackenzie gave it as his opinion that it was a case of commencing carcinoma. On April 23d the patient had another attack of hæmorrhage, which was promptly stopped by sucking ice. The disease has progressed most rapidly, and now presents a typical case of malignant ulceration. The left arytenoid cartilage is so enlarged that it passes over, so as to touch the centre of the ary-epiglottic fold of the opposite side, and entirely hides from view the posterior three-fourths of each vocal cord. There is, however, no difficulty of breathing, except in the horizontal position, when the stridor is considerable, the patient describing his sensation as if there were a flap in his throat, which moves to and fro as he breathes. Although the ulceration is extending, and the expectoration is considerable, the man considers himself improving, and exhibits an amount of hopefulness of recovery most unusual in cases of malignant disease.

2. *Enormous irregular thickening of the epiglottis, of doubtful pathological nature.*—G. M——, aged forty-two, married, with seven children, all delicate. His wife is subjected to perpetual eruptions, and has lost a large portion of her nose from lupus. Says he has never had syphilis or gonorrœa, and has been temperate in his mode of life. Applied at the hospital on account of difficulty and pain in swallowing, which had existed more or less for upwards of three years. For the last twelve months has had a cough, with occasional bloody sputa. Is unable to swallow anything but fluids or sops, and those with extreme pain. He has a very fair voice.

The laryngoscopic appearances in this case are very peculiar, and at first sight most puzzling. The epiglottis is enormously enlarged and thickened, hanging over the larynx, and somewhat resembling a section of an irregular mushroom. There is a large ridge in its centre, about half an inch wide, which looks like an immensely hypertrophied glosso-epiglottic fold. The arytenoid cartilages are more than half hidden by the epiglottis, but the right one is twice the size of the left. The view of the vocal cords is entirely occluded. Evidence of irregular and old-standing ulceration is seen on the inner surface of the arytenoid cartilage, and on the left side of the thickened middle ridge on the epiglottis.

This is one of those cases in which it is difficult to tell whether the disease is cancerous or syphilitic. The man has a yellow and cachectic appearance, and though the symptoms have been ameliorated under iodide of potassium, no alteration has taken place in the laryngeal appearances.

3. *Œdema of the larynx, with subsequent diphtheritic patches.*—This case, also at present in the hospital, is that of a single woman, aged twenty-nine, who applied in a state of extreme dyspnœa, with suffocation apparently imminent. The larynx was found to be uniformly congested and œdematous, but without ulceration. The patient had no voice, and seemed in great pain. She was ordered creasote inhalation, which afforded her considerable relief. On the following day, two symmetrical patches of diphtheritic deposit were observed on the arytenoid cartilages. Under topical treatment these disappeared in a few days. The patient is now suffering from slight general congestion.

4. *Laryngeal growths on both vocal cords.*—This case very well illustrates the value of the laryngoscope as a means of diagnosis, and an aid to treatment. The patient, Rebecca L——, aged twenty-one, single, applied on the 14th of May suffering with great dyspnœa and croupy inspiration, which, together with loss of voice, had existed for more than twelve months. She was now so bad that tracheotomy seemed almost necessary. After being put to bed and relieved by inhalations, a laryngoscopic examination was made, and the whole glottis, with the exception of the merest chink, was seen to be blocked up by a mass of warty-looking growths, proceeding from the vocal cords. There was also considerable œdema of the larynx.

On the 15th of June, Dr. Morell Mackenzie removed several pieces of growth with the tube forceps. Manifest immediate relief followed the removal of these portions of the growth; but the following day, in consequence, doubtless, of the irritation produced by the operations, the breathing seemed as bad as ever. She was relieved by benzoin inhalations. On the 19th, Dr. Mackenzie removed several more pieces of the growth.

It is worth mentioning, that it is tolerably easy, when there is a large growth, to remove a portion so as to give relief to the breathing; but it is when a small portion only remains, which is not sufficient to obstruct respiration, but quite enough to interfere with complete phonation, that the difficulty of cure commences.

TYPHUS FEVER RELAPSING AFTER AN INTERVAL OF FOURTEEN DAYS.

(Under the care of Dr. Broadbent.)

For the notes of the following case we are indebted to Dr. Robert W. Foss, assistant resident medical officer.

Fred. H——, aged seven years, was admitted on the 16th of March, and was said to have been suffering from feverish symptoms for the last eight days. He was seen first in the typhus ward, when he complained of a violent headache; his pulse was 120; skin hot and dry; no rash; no diarrhœa. On account of his coming from a house where there had lately been several cases of typhoid fever, he was ordered to the typhoid ward; and to have acid-and-opium mixture, with low beef-tea diet. He was not, however, removed till the following morning, so that he remained one night in the typhus ward. After his removal he continued in much the same condition until the 24th, when it was discovered that he had a copious characteristic typhus rash. His mind was composed; pulse 120; tongue covered with a thick, creamy fur; bowels regular; severe headache. He was sent back to the typhus ward, and ordered dilute nitric acid with low beef-tea diet;

and continued the same until the 29th, when he had a lysis, as shown by a free perspiration, his pulse falling to 84, and appetite returning. (The thermometer was not used in this case.) He was now ordered fish diet, and went on convalescing until the 13th April. During the interval he had a copious attack of scabies, for which he received the usual remedies. On the 13th he complained of headache and anorexia; his face was flushed; mind confused; skin hot and dry, no rash; pulse 120; tongue furred and dry, bowels regular. He was ordered compound acetate-of-ammonia mixture, and low beef-tea diet. On the 15th the skin was hot, desquamating, and brownish from the effects of the sulphur; and a typhus rash was again discovered. He was very prostrate, and suffered much from headache. On the 21st he perspired a great deal; his pulse fell to 84; he began to feel hungry, and was ordered fish. From that time he gradually improved.

The first rash was seen by Dr. Broadbent, the second by Dr. Murchison.

GREAT NORTHERN HOSPITAL.

A CASE OF CLEFT PALATE IN A LITTLE GIRL FIVE YEARS OF AGE; OPERATION SUCCESSFUL.

(Under the care of Mr. W. ADAMS.)

This case, for notes of which we have to thank Mr. Phil. D. Hopgood, house-surgeon, was one of cleft palate extending completely through both the hard and soft palates, and associated with hair-lip, leaving a single fissure extending into the right nostril.

March 3rd.—The patient being under chloroform, Mr. Adams performed the usual operation of removing the adjacent edges of the soft palate (preferring to leave the hard palate), and dividing the levator palati. Three sutures were employed, which were found sufficient to keep the edges in good apposition.

On the fifth day after the operation, the upper suture had given way, and the rest were removed; but union was perfect through central and posterior portions of soft palate to uvula.

On the ninth day, it presented a healthy appearance, and adhesion was good. Granulation and adhesion proceeding favorably at upper portion.

The gag, or instrument with a tongue-plate, and opening by means of cog-wheels, made by Mr. Ferguson, and recommended by Mr. Thomas Smith, was used in this case.

OPERATION FOR DOUBLE DIGERGENT STRABISMUS.

(Under the care of Mr. HULME.)

We noticed a very satisfactory result of a case of double divergent strabismus, in which Mr. Hulme had lately operated, the short notes of which are as follows:—

Mary H——, aged thirty-five, had both eyes operated on twenty-five years ago for a convergent squint. The following was the condition of her eyes when she came under Mr. Hulme's observation. About three months ago the right eye was hypermetropic (1-24), was everted to the extreme external angle of the palpebral fissure, the outer edge of the cornea being retracted to this point. She, however, retained the power of bringing the pupil to the mesial line, but there was no power of convergence whatever, and the globe was habitually completely everted. The left eye, which was also hypermetropic (1-36), and which she used in her occupation as a seamstress retained its central position, all power of convergence was, however, totally lost. Both recti had entirely lost their attachments to the globes; and the double divergent strabismus was especially deforming, as when by an effort of the will she brought her right eye into a straight position, the left became everted, and the confusion of sight, owing to the different focal lengths of either eye, was troublesome.

Mr. Hulme operated on the left eye first, bringing forward the inner rectus, and dividing the external rectus. This was very satisfactory, and she obtained with this eye good power both of inversion and eversion. Double vision was very annoying during the first week after, but in the course of a fortnight she felt no inconvenience from this source. Mr. Hulme then operated on the right eye in the same manner. The result of this operation was, that instead of the external strabismus, the eye was inverted for about two lines, and the power of eversion was lost, owing to the external rectus, which doubtless had become shortened, having so far retracted from its insertion as to lose its attachment to the globe. Mr. Hulme therefore, by a third operation, dissected the conjunctiva well off the globe, brought forward the tendon of the external rectus, and after having temoved an oval piece of the conjunctiva, fixed it by three stitches to the outer edge of the cornea. The already drawn forward inner rectus was not interferred with. The final result of these operations has been that, although there remains the slightest possible inversion of the right eye (½ a line), this is corrected by the use of a + 30 pair of spectacles, and the deformity has been entirely done away with. She now resumes her work, both eyes having fine power both of inversion and eversion. There is no double vision whatever.

ST. BARTHOLOMEW'S HOSPITAL.

A SEVERE CASE OF STRUMA; REMARKABLE BENEFIT BY THE WATERS OF THE WOODHALL SPA.

(Under the care of Mr. PAGET.

We publish the following case from notes kindly supplied to us by Mr. Henry T. Butlin, late house-surgeon, because of the very remarkable effect which was produced upon the patient by his stay at the Woodhall Spa, in Lincolnshire, to which he was sent by Mr. Paget. It would seem likely that this Spa offers peculiar advantages in cases of strumous cachexia.

J. B.——, aged twenty-four, married, by trade a shoemaker, was admitted into St. Bartholomew's Hospital in July, 1868. Thin, pale, and emaciatd. He suffered from a strumous abscess on either side of the neck, a large one between the shoulders, and a deep abscess at the top of the sternum exposing the bone. From all these there was profuse discharge. He complained of pain at the sternum, extending to the back. His appetite was extremely bad; his tongue red and dry; his pulse slow and very small. Frequent attacks of diarrhœa had helped to bring him into the miserable state of exhaustion in which he was admitted. He was first put upon a nourishing diet of essence of beef, eggs, milk, together with a large quantity of stimulants; but, in spite of all, he remained for some time in so precarious a condition that his life was despared of. The wounds were dressed with a lotion consisting of one drachm of tincture of iodine, one drachm of glycerine, and four ounces of water.

In August, Mr. Paget kindly offered, at his own expense, to send him to the Woodhall Spa for a month; but the patient's health was such that for some days he was quite unfit to be moved. He fortunately rallied, however, and it was thought he might safely undertake the journey. Nevertheless, it was scarcely hoped that he would be seen alive again. However, a month afterwards he walked to the hospital to show himself. He was much stouter; pulse stronger; tongue clean and moist; appetite good. The deep wounds from which he had suffered were nearly healed, and the attacks of diarrhœa had ceased.

Mr. Cuffe has supplied us with the following notes of progress and treatment whilst at Woodhall.

Six ounces of the water, tepid, daily (except when the diarrhœa was urgent; bath, 95°, alternate days, half an hour; nourishing diet, with, during the first week, three ounces of brandy daily; afterwards half a pint of porter each day. The wounds were dressed with lint wrung out from spa-water. He had a severe attack of diarrhœa during the second week of his stay, and this prostrated him to such an extent that his life was for some time despaired of. For this he took chloric ether, morphia, aromatic confection, and brandy. From this date he gradually improved in strength and appetite until he left the Spa.

◆

MIDDLESEX HOSPITAL.

LARGE FLESHY POLYPUS OF THE NOSE; OPERATION.

(Under the care of Mr. De Morgan.)

The patient, a man aged forty-one, was admitted on the 13th of April with a large polypus in the left side of the nasal cavity. It filled up the left nostril, and a large mass of it could be felt hanging down behind the soft palate. The left side of the nose was bulging, and the nasal bone was in great part absorbed. The left eye was protruded, and the orbit was evidently filled with the growth. There was no depression of the hard palate, or swelling in the cheek or the frontal region. No tumor could be seen in the right nostril, but he was unable to breathe through it.

His account was that he had had a stoppage in the left side of the nose last summer, and that four months ago the tumor had been detected in the nostril. Nine weeks before his admission, an attempt had been made to remove it in the ordinary way, but the hæmorrhage had been so great that it was given up. A week or two after, a second attempt was made at another hospital, but was abandoned for the same reason. When he came here as an out-patient, the house-surgeon again tried to remove it, but severe bleeding again came on, and he was taken into the hospital.

It was clear from the protrusion of the eye and of the side of the nose, that, even if there were no hæmorrhage, the tumor could not be removed by the nostril. On April 21st, Mr. De Morgan made an incision through the lip, and carried it through the side of the nose to the upper end of the nasal bone, which was then cut through with a pair of scissors. The nasal cavity was thus exposed, and was found to be occupied by a fleshy mass, which had its attachment to the bones forming the inner wall of the orbit. These were in great measure absorbed, allowing of the growth to pass freely into the orbit itself. The whole mass was scooped away with the finger, the bleeding being less than when the attempt had been made to remove it through the nostril. The orbit was cleared from all the growth; none had passed into the antrum. The parts were carefully brought together, and united by primary union. The eye, which had been dim, soon regained its position and clearness of vision; and a discharge from the nostril, which was at first somewhat foul, was soon checked by injection of Condy's fluid. He was discharged well on the 16th of May.

The growth was composed principally of round nucleated cells, of uniform size, with a very spare amount of connective tissue. It was, then, a form of sarcoma, in no way resembling the ordinary gelatinous polypus, and there is a probability of its recurrence. Its rapid growth and absorption of the bone around it lead to the same conclusion.

◆

CHARING-CROSS HOSPITAL.

The following operations were performed at this hospital. For notes of them we have to thank Mr. J. K. Kidd, house-surgeon.

Amputation of the lower third of the thigh, by Mr. Hancock.—This was a case of compound fracture of the patella, communicating with the joint. The patient had been undergoing the palliative treatment for some time; but of late the constitutional disturbance had been so great that amputation was determined on. The antero-posterior flap operation was performed.

Excision of the knee-joint by Mr. Hancock.—A girl ten years of age, with disease of cartilage and bone. The H-incision was made; the articular extremities of the tibia and femur were removed, as also was the patella.

Excision of the elbow-joint, by Mr. Canton.—A boy eight years of age, with disease of the elbow-joint, and great constitutional disturbance. The ordinary operation was performed.

Lithotomy, by Mr. Hancock.—A boy, eleven years old. The laterial operation was performed, and the stone instantly grasped; but, on account of the unusually large size, great care was necessary to accomplish its extraction. It was composed of lithic acid, and presented a rough, spiculated surface.

Excision of the head of the femur, by Mr. Hancock.—This was a case of femoral coxalgia, occurring in a girl ten years of age, and was peculiar, inasmuch as the head of the bone was dislocated on to the *pubes*.

Excision of the ankle-joint, by Mr. Canton.—This was a case of caries occurring in a boy four years old. The articular surface or the tibia was removed, that of the astragalus being found so slightly affected that it was not expedient to interfere with it.

Excision of the head of the femur, by Mr. **Canton.**—This was another case of femoral coxalgia, occurring in a boy twelve years of age. The bone was cut through the neck, leaving the trochanters entire.

Amputation of conical stump of left thigh, by Mr. **Barwell.**—In this case the skin and integument were firmly adherent to the extremity of the bone, and the stump was very conical in form.

Provincial Hospital Reports.

BIRMINGHAM GENERAL HOSPITAL.

PRIMARY CANCER OF THE LUNG, SIMULATING PLEURITIC EFFUSION: EXPERIMENTAL PARACENTESIS.

(Under the care of Dr. **Russell.**)

The diagnosis of primary cancer of the lung is, perhaps, the most interesting subject connected with that disease. The cancerous matter, in spreading from the root of the lung, may take different directions, and dispose itself in various manners in different cases, and may thus occasion considerable variety in the phenomena it produces. Hence almost every case of primary cancer of the lung possesses features peculiar to itself, and presents special difficulties to the observer in forming a diagnosis.

In the present case the diagnosis was materially complicated from the peculiar difficulty in gaining any information respecting the patient's history at the time she was first seen, when her condition appeared so urgent as to require immediate decision upon the course to be pursued.

A. H——, aged thirty eight, was admitted in a state of extreme distress from dyspnœa. She was nearly stone-deaf, could only articulate a few words, and was not accompanied by any friends. The only information that could be gained was that she had been ill a fortnight, and had been exposed to cold. She was pallid, emaciated, and suffering from urgent dyspnœa, which appeared immediately to threaten life. There was no heat of the skin. Inspiration was very noisy. Decubitus was completely on the left side. The left side of the chest was perfectly dull on percussion from apex to base; the right was quite clear. The left ribs were perfectly motionless in respiration, and respiratory sounds were entirely absent on the left side; on the right they were accompanied universally by loud and coarse crepitation. The voice was too faint to form a means of diagnosis. The heart's impulse could not be felt, but the sounds were most distinct on the right of the sternum. The case had the aspect of extensive pleuritic effusion, with sudden access of bronchitis on the opposite side. But the circumference of the left side was not increased; the dullness did not involve the sternum, which was clear to percussion, and the intercostal spaces were drawn in during inspiration. Mr. Pemberton, very properly, laid great stress on this last circumstance. Under the urgent circumstances in which the patient was placed, an exploratory puncture was made with a fine trocar: only a jet of clear blood issued with each expiration.

The patient died three days after; but before death the *lower* half of the chest, posteriorly, had become clear on percussion, and respiratory sounds were clearly heard over that region, rendering it evident that the dulness had been occasioned by effusion of fluid over an adherent lung; the noise during inspiration was louder, and had the character of stridor; and now the patient sat continually, with the body bent somewhat forwards.

On post-mortem examination, the root of the left lung was found to be surrounded by a mass of medullary cancer, which completely enveloped the bronchus and the large vessels. The cancerous matter had infiltrated the substance of the upper lobe of the lung very extensively. The lower lobe was free from cancer, but was much contracted. The entire lung was closely adherent to the ribs. The heart occupied its usual situation, and the pericardium was quite exposed in consequence of the contraction of the lung. Some of the bronchial glands were infiltrated with cancerous matter, but every other organ in the body was free from the disease.

Subsequent inquiry revealed that the patient's health had been failing for years, and that short breath and cough had existed for two years. She had been wet through two months ago, and had been worse ever since. Her health had become much worse during the three days preceding her admission, and a fortnight previously she had had advice for pain in the side and short breath.

◆

ROYAL NAVAL HOSPITAL, HASLAR.

CASE OF IDIOPATHIC GLOSSITIS.

(Under the care of Staff-Surgeon **Vaughan**, R.N.)

Assist-Surg. Turner, R.N., has obliged us with the accompanying notes.

G. W——, aged seventeen, a well-nourished, healthy boy, was admitted into the hospital from a training ship in harbor, on the 21st of January last, suffering from acute inflammation of the tongue.

So rare is the disease that it is not mentioned in the handbooks on surgery. The following details, from various authorities, may be found interesting:—

In Dr. Copland's "Dictionary of Practical Medicine," the disease is described as sometimes very severe and dangerous. Dr. Copland, in his own practice of thirty-five years, had met with only four cases,—in all of which the inflammation was limited to one side of the organ. Mr. P. G. Frank treated seven cases in forty-five years,—one case only had come under his notice during a period of twenty-five years.

The rapidity of the disease is remarkable, Dr. Moses, of New York, giving it a course of from twelve hours to six days,—usually ending in resolution, abscess, gangrene, or death. De la Malle, in the "Cyclopædia of Anatomy and Physiology," gives a case where the patient was almost suffocated in five hours from setting in of the inflammation, and was saved by free incisions into the organ. This plan of treatment is the most effectual, and requires to be promptly applied, as the immediate danger is extension of the inflammation to the glottis, and death by suffocation. The incisions leave very little permanent marks on the tongue. De la Malle says that in one case in which three parallel incisions penetrated two-thirds of the preternatural swelling, next day they had the appearance of mere superficial excoriations. In the case of the boy admitted into Haslar Hospital, after a few days there was not the slightest trace of the incisions, although they had been seemingly carried four or five lines into the substance of the tongue.

The utmost vigilance is necessary, as the following case will illustrate:—An adult, aged forty-eight, was admitted into Lazarus ward, Guy's Hospital, in August, 1863. No danger was apparent. The nurse had strict orders to call the surgeon should any increased difficulty of breathing arise. The man was found dead the next morning, and the necessity of early incision was evidenced when, on autopsy being performed, the glottis was found swollen from effusion beneath the mucous membrane, and no doubt had caused death by suffocation.

The history of the case admitted into Haslar Hospital, as stated above, threw no light on the cause. The patient had complained two days previous of tenderness in the organ, but had received no hurt by any means, nor had he been using mercurial preparations.

On admission at two P.M. the apex of the tongue was protruding from the mouth about half an inch, very much swollen, and completely filling up the aperture; lower lip swollen and ulcerated; salivation, and fetor of breath; a soft swelling on the right side of the lower jaw, unconnected with the glands. The enlarged organ occupied almost completely the cavity of the mouth, and nothing could be passed beyond the teeth of the upper jaw without great difficulty and pain to the patient. A thick white fur covered its surface, and there was a constant flow of saliva. The face was flushed, and pulse quick. Ordered fomentation, inhalation of vinegar on sponges, strong beef-tea, and milk. Deglutition was, however, almost impossible, and only very small quantities at a time were passed, as far back as possible.—6 P.M.: Swelling and tension somewhat relieved. Was able to swallow some beef-tea out of a feeder. Tongue and lips well washed with Condy's fluid mixed in tepid water. The flow of saliva constant.—8.30 P.M: No improvement. Face flushed; breathing oppressed. Two parallel incisions were made from base to apex. A moderate amount of bleeding took place, with considerable relief to patient. To continue fomentation.

22nd.—8 A.M.: Slept badly; bleeding continued during the night; swelling subsiding, and protrusion less; apex still prominent. A piece of sponge passed beyond the teeth with care.—1 P.M.: No change; takes his nourishment well; pulse 116. Ordered chlorate of potash mixture.

23rd.—Passed a better night; tongue has resumed its natural position, the swelling having materially subsided; saliva still flowing; able to sit up in bed; bowels constipated. Ordered castor oil.

24th.—Slept well; tongue rapidly decreasing in size, incisions healing; salivation much diminished; lower lip painful and ulcerated; bowels open; can swallow now easily.

25th.—Tongue cleaner; incisions quite healed; able to talk freely; still adheres to the previous history he gave.

30th.—Salivation has ceased; ulcers on lower lip consequently healing.

Feb. 1st.—A few ulcers remain open on the lip; but no trace of incisions on the tongue now visible; although not quite its normal size, it causes no inconvenience in its use.

4th.—Put upon full diet and quinine mixture; convalescent.

The cause of salivation was, no doubt, owing to the patient's inability to dispose of the fluid in the usual way, the swollen state of the tongue preventing the act of deglutition. There was no swelling or undue irritation of the glands, or abscess forming. It may be here stated that no pus whatever was formed in the above case.

CROYDON GENERAL HOSPITAL.

FRACTURE OF SEVERAL RIBS; UNREDUCED DISLOCATION OF CLAVICLE FORWARDS; RECOVERY.

(Under the care of Dr. T. RUTHERFORD ADAMS.)

David G——, aged thirty-eight years, a bricklayer, was admitted on the 12st of January, 1869, in a state of collapse, caused by injuries received whilst he was in the act of removing some supports to a large arch of brickwork. The whole mass gave way, killing two of his companions, and injuring himself and another man, who was less severely hurt. It was found at a glance that the left clavicle was dislocated forwards; and, upon placing the hand over the left side, there was loud crepitation, showing that four of the ribs were completely factured, and the side flattened. The clavicle projected on the fore and upper part of the sternum. The slightest attempt to move him caused the greatest pain; and, from his depressed condition, nothing in the way of reduction was attempted. A broad roller was applied round the chest, and light nourishment given, with sedatives, and complete rest enjoined. For some days it was thought that the man could hardly recover, his symptoms were so very unfavorable. Eventually, however, he did well, and left the hospital a month after the accident. His case being unusual, Dr. Adams sent him up to University College Hospital to Mr. Christopher Heath, who, with Mr. Erichsen, examined him, and had a cast taken for the museum. They both concurred in advising that no attempt at reduction should be made, as the injury had then existed six weeks.

Medical Societies.

AUGUST—SEPTEMBER.

OBSTETRICAL SOCIETY OF LONDON.

Dr. GRAILY HEWITT, President, in the Chair.

Mr. Spencer Wells exhibited the Uterus and Ovaries of the patient from whom he had removed the Fibro-cellular Uterine Tumor which he had shown at the last meeting, and which had been reported on by Dr. Braxton

Hicks. It was seen that the tumor had been an outgrowth from the posterior surface of the fundus, the rest of the organ being healthy, with the exception of another very small outgrowth. The patient died on the third day after operation, not from any bleeding, peritonitis, or other direct consequence of the operation, but from fibrinous deposit in the right side of the heart. Superfibrination of the blood had been feared from the first, on account of the rapid rise in the temperature of the body from 98·4° to 101° within twelve hours, and then rapidly upwards to 105·8°. This was accompanied by hurried breathing and feeble rapid pulse, with scanty secretion of urine charged with urates and pigment. The first sound of the heart became feeble more than twenty-four hours before death, and was inaudible for fully twelve hours. In all operations where peritonitis might be expected, Mr. Wells said he considered its direct effects far less serious than its tendency to cause excess of fibrin in the blood and separation of the fibrin in the heart. In reply to a question from the President, Mr. Wells said there appeared to be certain seasons in which this condition of the blood was epidemic, and at these seasons croup, diphtheria, and other conditions characterized by fibrinous exudations were also prevalent. Dr. Richardson was constructing a table which would probably be of great value to surgeons, showing by meteorological observations certain relations of temperature, barometric pressure, dryness of the air, amount of ozone, &c., when fibrinous deposits might or might not be feared.

Dr. Routh said that in the *éclat* of operation it was perhaps not sufficiently considered that this tendency to fibrinous deposits was perhaps remediable. It was not because it was epidemic that we should remain satisfied, and let our patients die. Diphtheria was such a disease, and yet physicians tried to cure it, and often did. Rheumatism also was a disease in which there was a tendency to fibrinous deposits, but it too was curable. Why not try the same means with this affection at its outset? Dr. Richardson had stated to him that rheumatic fever was amenable to ammonia, and the alkaline treatment for that disease was common. In peritonitis, accompanied with flocculent deposits, the fluid was often acid, showing that the blood was less alkaline than normal, and pointing to the use of alkalies, which might also be found useful in ante-mortem clots.

A Report, by Dr. Hicks, on the Microscopical Appearances of Mr. Wells's specimen, was read.

Dr. Hicks then exhibited the Uterus of a woman he had a week before delivered by the Cæsarean section. The body of the uterus contained some large masses of fibroid, especially near the fundus, from which one about an inch and a half in diameter was pendulous into the peritoneal cavity. There was one diverging at right angles from the left side of the cervix, about six inches long, and nearly four in diameter, when removed. This had occupied the brim, and was firmly attached to the pelvic walls, pushing the cervex uteri over to the right side, leaving only an opening large enough to permit the fœtal arm to protrude, and one finger to pass by it; excepting this opening, the whole brim was completely shut up. It was very hard. As it was impossible to deliver by the natural passages, Dr. Hicks performed Cæsarean section, aided by Drs. Bush, Shears, and Frodsham. The principal difficulty arose from hæmorrhage, a very large sinus having been divided, which bled so profusely as to require a suture to be passed beneath it on either side. The seat of the placenta also bled inordinately, requiring the use of the liquor of perchloride of iron. The sutures which compressed the sinus were carried through the parietes, whereby both were brought into contact, thus preventing any escape of the uterine contents into the peritoneum. No further bleeding took place. There had been much vomiting during pregnancy, and this continued next day, but on the second day it much diminished. The third day it was moderate. The beginning of the fourth day she sank from peritonitis. The child was born alive, but soon died. Chloroform was administered. The patient had been in slow labour some time, and the amnial fluid had been draining away probably for weeks.

Mr. Curgenven exhibited a Genealogical Chart, illustrating the extreme hereditary tendency which existed, in a family with which he was acquainted, to the production of twins.

Dr. Meadows related a case of Procidentia Uteri, with considerable *allongement* of the cervix, which occurred in a young unmarried woman, nineteen years of age, and in whom he performed the operation of amputation of the cervix. The procidentia had existed for about a year, and came on as the result of lifting heavy weights. Various means were tried to keep the uterus in its proper position, but without success, the failure being due partly to the elongation of the uterus, and partly to the fact that there was little or no perineum to support the organ. Finally, it was decided to amputate a part of the cervix, which was done with the single-wire écraseur. Rather more than the usual amount of pain was experienced, and there was a short but somewhat smart attack of febrile disturbance after the operation, which lasted for about two days. The next day it was observed that the patient could not retain her urine; and, on making an examination a few days after, it was found that a portion of the bladder had been removed with the cervix. On examining the specimen, it was then discovered that not only had this occurred, but that a portion of the peritoneum from Douglas's pouch had also been removed; so that, in fact, the peritoneal cavity had been laid open. Strange to say, the symptoms resulting from the latter occurrence were exceedingly slight, and only lasted for a day or two. A few weeks afterwards Dr. Meadows closed the opening in the bladder, which was a large one, and the patient recovered without any further bad symptoms. Dr. Meadows brought this case before the Society as a warning to others, and as illustrating one of the dangers of this operation, which, he stated, was not noticed in any work on uterine surgery, except that of Dr. Marion Sims, who had himself met with a similar accident, and who also referred to another case which occurred in the practice of an eminent accoucheur in New York.

Mr. Spencer Wells said that a chain or wire might be properly applied, but when it was tightened, lax tissues beyond the part first constricted might be drawn within its grasp, if this was not prevented by pins passed beyond the site of constriction, or by some kind of shield. Possibly the accident described by Dr. Meadows so honorably and usefully, might be so explained.

Dr. Braxton Hicks considered the Society should be proud to contain a Fellow so candid. He had himself, in the removal of a malignant cervix, invaded the posterior pouch of the peritoneum; but the case did well. He thought the accident could always be avoided by pushing up the uterus as high as possible; if no prolongation of the cervix remained, he considered it needless to operate. If any great length remained, then it could be removed without danger of including either bladder or peritoneum.

Dr. Rogers eulogised the courage and honorable spirit which had induced Dr. Meadows to bring before the Society the history of this accident. He (Dr. Rogers) could not think that when once the wire was fixed around the cervix, any tissue that had not been previously within its circlet could be drawn in during the operation, and cut away. A careful exploration by the sound in the bladder would have shown how low down on the cervix the bladder was attached, and then this unfortunate accident would have been prevented.

Dr. Protheroe Smith, whilst expressing his admiration of the candor of his colleague in bringing this case before the Society, would remark, what all who were in the habit of performing this operation must have noticed, that the resistance of the tissues to the action of the instrument was very considerable. And this resistance he believed chiefly to arise from the mucous membrane and its connecting tissue. He would therefore advocate the plan, which he had adopted on several occasions, of cutting through the mucous membrane before using the écraseur. In this way, too, there was less risk of drawing adjacent parts within the grasp of the wire. He believed that this plan had been also usefully adopted in operating on hæmorrhoids.

Dr. Gervis could hardly assent to Dr. Protheroe Smith's view that the mucous membrane offered the chief obstacle to amputation of the cervix. In cases in which he (Dr. Gervis) had miscalculated the density of the cervix, and used a wire or rope of insufficient strength, it had happened that before the operation was complete the wire had snapped; but in these cases the mucous membrane had always been cut through, and the obstacle which had proved too great for the wire had been the compressed inner tissue of the cervix itself; and the same held good in cases of removal of large polypi.

Dr. Rogers wished to remark, on the suggestion of dissecting up the bladder from the cervix before the wire was applied, that he had performed this dissection on the dead body, and found the difficulties and danger from hæmorrhage would be so great, that he had not ventured to perform it on the living subject.

Dr. Protheroe Smith, in reply to Dr. Gervis, could but say that his experience led him to the opposite conclusion, and that he had observed that the mucous membrane of the cervix was that which was most resistant and tough. In reply to Dr. Rogers, he begged to state that he did not dissect up the mucous membrane from its connexion with the bladder. He simply cut through the membrane around the cervix, about an inch above the os.

ON PERITONEAL ADHESIONS OF THE GRAVID UTERUS AS A CAUSE OF POST-PARTUM HÆMORRHAGE.

By Graily Hewitt, M.D., F.R.C.P.

In this paper the author pointed out an occasional cause of retention of the placenta, and consequent liability to post-partum hæmorrhage, arising from adhesions between the upper part of the gravid uterus and the adjacent parts, whereby the uterus is prevented from descending in the proper manner after the expulsion of the child, and mechanically held in a distended condition. It was shown how such a state of things must render retention of the placenta and hæmorrhage very liable to occur. This cause of difficulty had not, so far as the author was aware, received attention by obstetric authors. The proof of the connexion between these adhesions and the accident in question was given by a case which he had observed a few years since. The patient had been delivered of twins, the placenta was retained, and a most profuse bleeding had occurred. The placenta was removed by the hand, the fundus uteri lying very high up in the abdomen. Seven days later death occurred from gradual exhaustion, there having been a little secondary hæmorrhage. The post-mortem examination showed firm, tough, broken-off adhesions at the top and back of the uterus, giving it quite a shaggy aspect. The ends of these string-like bands hung freely, and were two to three inches long. It was evident that the uterus had been adherent superiorly by these adhesions, and that they had been broken through when the uterus was finally made to descend. [A drawing of the uterus, made at the time, was exhibited.] Next, the author related another case where, after delivery, retention occurred, and the placenta was found enclosed in the fundus of the uterus, at a very unusual height in the abdomen. In this case also, a very violent hæmorrhage occurred, but after the placenta had been extracted. Lastly, a case was related where adhesions appeared to have been present, tying over and obstructing the bowel, and causing such extreme pain at the end of the eighth month that the question of inducing labour had to be considered. The labour set in in a few hours, the pain having been unceasing. The subsequent events appeared to bear out the opinion just expressed as to the nature of the case. The author finally stated his belief that further inquiry would prove the connexion now pointed out between uterine adhesions and post-partum accidents to be one not, perhaps, unfrequently existing, and its practical importance could scarcely be overrated.

Dr. Gervis was hardly prepared as yet to accept fibrinous bands of no greater strength than those attached to the specimen exhibited as sufficient to prevent due uterine contraction, unless there were coexistent uterine inertia. Adhesions of a nature to check uterine contraction, must almost of necessity have been the result of peritonitis occurring during the progress of gestation; and he would like to know if there were any evidence of such peritonitis having occurred during pregnancy in the cases cited. He had recently attended, in her confinement, a lady who had been the subject of pelvic cellulitis and abscess of a chronic character, and in whose confinements, since the first occurrence of the cellulitis, there had on each occasion been much anxiety from post-partum hæmorrhage. In her last confinement this danger was again apprehended, and it did in fact occur. In this case he had certainly at the time looked upon it as arising from inertia uteri, due to the general depression of strength brought about by her long-continued sufferings; but, viewed in the light of Dr. Hewitt's suggestive paper, it might well be that one element in these repeated post-partum hæmorrhages was the existence of adhesions due to the pelvic cellulitis. He would like to ask the experience of others in similar cases.

Dr. Cleveland had been partly anticipated in the remarks made by Dr. Gervis. He could not conceive how adhesions formed during pregnancy could be of such strength and firmness as not to be separated when the uterus contracted after the birth of the child. In the first case related by the author, the uterus as usual recovered its contractile power, and followed the hand on withdrawal to its natural size and position. Although the paper was of much interest, further evidence was, he thought, required before adhesions could be regarded as an efficient cause of retained placenta or post-partum hæmorrhage by mechanically preventing uterine contraction.

Dr. Rogers thought that adhesions to the bowels would not prevent uterine contraction, but that such adhesions, if high up in the abdominal cavity, might have that effect.

Dr. Holman thought it was a matter of experience that in cases where there had been peritonitis or pelvic cellulitis there was increased tendency to post-partum hæmorrhage. Many cases were met with in which the uterus did not contract, and in which the hand had to be left within it for some time after the separation of the placenta. In such cases it was quite possible that adhesions might assist the inertia in the production of hæmorrhage, and if they were strong they would not be broken down until the uterus was pressed down by the hand externally. As to the case of irregular contraction, it had long been the practice, he thought, to apply one hand over the uterus externally whilst the other was employed in delivering the placenta; and thus a perfect knowledge was obtained whether firm regular contraction had taken place, and the uterus had fairly sunk in the pelvis.

Dr. Wynn Williams observed that he could not agree with the President that adhesions were a frequent cause of hæmorrhage after parturition; for if it were so, there should surely be numerous instances where such adhesions were demonstrated by post-mortem examination, as peritonitis during pregnancy was not at all uncommon. In the first case, the very fact of the adhesions having been ruptured, either by the contraction of the uterus or by the manual pressure exerted on the uterus, proved to his mind that they could have been little or no impediment to the uterine contraction. He had recently attended in her confinement a patient who had been operated upon by Mr. Wells for an ovarian tumor; partly from want of power and partly from the uterus being fixed by the pedicle of the removed ovary, he had had to complete the delivery by forceps. The same causes rendered it necessary to extract manually the placenta, and although subsequently the uterus was got to contract, it was impossible to press it down into the pelvis. In this case, however, there was scarcely any hæmorrhage. He wished also to call attention to the great advantage to be derived in cases of post-partum hæmorrhage from the introduction into the uterus of a sponge saturated with tincture of perchloride of iron.

Mr. Spencer Wells said that in Dr. Williams's case the tumor had been enormous, and distension of the abdominal muscles might account for feeble expulsive power. He had upwards of twenty cases of childbirth, not including his ovariotomy cases, and in none had uterine adhesions led to any unusual difficulty. But such adhesions certainly might have such an effect, for Sir J. Simpson had recorded a case where the pedicle of an adherent fibroid had been ruptured by the uterine contractions, and he (Mr. Wells) had seen a patient in whom fatal strangulation of adherent intestine had been so produced after labor.

Dr. Rogers disputed the relevancy of Dr. Williams's case. It was simply one of adhesion of one of the broad ligaments of an unimpregnated womb low down to the abdominal wall. Such adhesion did not, of course, prevent the enlargement of the uterus when impregnated, nor could it prevent the subsequent contraction on labour coming on.

Mr. Spaull related the particulars of a case of severe post-partum hæmorrhage (successfully overcome) in a patient who, during her pregnancy, had had several attacks of peritonitis, and in whom, consequently, he thought it very likely that adhesions had taken place.

The President observed, in reply, that adhesions such as those described, coexisting with a feeble condition of the uterus, would present a combination of circumstances highly favorable to hæmorrhage. It was difficult enough, sometimes, to get the uterus to contract at all, but if drawn upwards, or restrained by tough adhesions, the difficulty would be greatly increased.

The President exhibited a form of bead suture for perineal operations, which he had used, and which was less likely to lead to sloughing of the enclosed parts than the quill suture ordinarily employed. Round vulcanite beads, seven-sixteenths of an inch in diameter, and perforated for the wire, constituted the suture.

Dr. Meadows bore testimony to their value.

Dr. Routh thought they might in practice prove disadvantageous, as in chronic cases of laceration he liked to see a little sloughing in the trails of the deep sutures, as it made the new perineal cushion more firm and durable and thicker.

◆

PATHOLOGICAL SOCIETY OF LONDON.

Dr. Moxon brought under notice a case in which Colorless Mucus was found in an Obstructed Gall-bladder, there being no bile present in the gall-bladder or intestinal canal. The patient was not jaundiced, but was affected by pyæmia. Dr. Moxon stated that he had observed several cases of the same kind; and Dr. Murchison thought the case tended to prove that bile was not formed in the blood.

Dr. Payne and Mr. Henry Arnott both exhibited specimens of Myomatous Tumors: the one removed by Mr. James Lane from the gluteal region of a woman, and made up of globular masses, some opaque, some fatty, and some gelatinous—together of 13½ lb weight; the other removed from Scarpa's triangle, and giving out on section viscid mucus, and composed microscopically of irregularly branched cells with delicate fibrillæ, forming an open network inclosing abundant mucous corpuscles.

Dr. John Murray exhibited a specimen of extensive Ulceration of the Stomach—5 in. long by 3½ in. broad, and occupying the entire space between the cardiac and pyloric orifices, the pancreas and liver forming the floor of the ulcer—from a patient aged thirty-eight.

Next in the list of specimens came a Colloid Tumor of the Female Breast; a specimen of Gangrene of the Head and Neck of the Thigh-bone, from a child admitted into hospital with the bone protruding through the skin; and the parts from a Diseased Knee-joint,—all by Mr. Gay.

Dr. Crisp followed with a specimen of Atheroma of the Aorta, from a dram-drinker aged twenty-two.

Dr. Church showed two Renal-Calculi: the one of crystalline oxalate of lime, found in a small pouch in the kidney of a lady who had, when a child, suffered from peculiar pain in the back; the other, composed of cystine, from an old man with contracted kidney.

Dr. Down exhibited a Microcephalic Skull, from a boy fourteen years old,—the mediopar-ietal and all other sutures being present.

Dr. Cayley brought forward a specimen of Sarcoma of the Stomach from a man aged sixty-seven, who died without gastric symptoms in the Middlesex Hospital. At the post-mortem the coats of the stomach were found to be much thickened (three inches); and, microscopically, oval (cancerous?) corpuscles were detected in the mass.

Mr. Adams exhibited a Cancer of the Breast, removed from female aged eighty, which had commenced in the skin, and advanced downwards.

Mr. Adams showed a Knee-joint from a woman, twenty years of age, who had had acute rheumatism, and was admitted into the Great Northern Hospital with both knees and hip-joints fixedly flexed, the deformities being forcibly reduced under chloroform, from the effects of which the young woman never recovered. The cartilages of the knee-joint appeared to be still healthy; but there were bands between the surfaces. Some discussion took place relative to the origin of these bands. Mr. Adams thought that the formation of the bands was, in the main, the result of rheumatism, and that no suppuration or ulceration occurred in rheumatism. Mr. Gay thought that the bands were probably formed by lymph thrown out by the synovial membrane. Mr. Hulke could not conceive that the cartilages could be healthy if these bands were present. Admitting the probability of the formation of these bands from lymph, he thought that the latter was evolved from the superficial layers of the cartilages; he of course referred to the bands found in young children.

Dr. Moxon, lastly, exhibited a specimen of extensive Ulceration of the Intestines, from a woman who was admitted into Guy's Hospital with obstruction of the bowels. There was little inflammatory appearance found after death, but the cæcum and colon were deeply ulcerated, and much stricture existed at the sigmoid flexure.

Mr. Pick exhibited for Dr. Fuller a large Tumor, which nearly filled up the whole of the abdominal cavity, and had taken its origin from behind the peritoneum; it weighed 28 lb., was entirely fatty, and was of six months growth. Mr. Hulke wished to know whether it was regarded as primarily fatty, to which Mr. Pick gave an affirmative reply. Mr. Birkett mentioned a similar case which had occurred in the practice of Mr. Cooper Forster.

Mr. Myers exhibited for Mr. Trotter a specimen of Horny Tumor from the arm, and from the base of which an epithelial cancer had developed.

Mr. Curling showed, firstly, an interesting case of Calculous, the nucleus of which consisted of hair, which was human. Secondly, a specimen of Diseased Testicle from a man aged twenty-four, and in which there was "fibroid" deposit in the substance of the organ, giving the appearance of tuberculous disease. On microscopic examination, the deposit was seen to be fibro-plastic. This is the only case of the kind Mr. Curling has seen which offers any resemblance to the form of disease described by one of the French surgeons as a fungus of the testicle taking its origin in fibroid deposit. Thirdly, Mr. Curling sent round the room parts removed from a knee-joint affected with Chronic Rheumatic Arthritis, in a young woman. The disease commenced at the age of eighteen.

Mr. Birkett exhibited the bones of the knee-joint of a girl aged twenty, whose leg had been amputated. The patient had suffered for twelve years, and there was great emaciation. The only hope of saving life seemed to be in amputation. The articular surfaces of the joint were more or less destroyed, but nature had made the attempt to form new articular surfaces or to patch up a joint; the exact appearances, however, are difficult briefly to describe.

An interesting case was related by Dr. Dickinson. He began by sending round some pieces of malignant tumor passed per urethram. He then alluded to the fact that it is very uncommon for a mucous surface affected by malignant disease to give off characteristic pieces or cells in any recognizable amount. His case was a remarkable exception to this rule. Last July, Mr. Smith had brought to Dr. Dickinson a quantity of urine looking like a bloody fluid, in which were coagula of the size of peas, passed by a man in apparent health. Dr. Dickinson on examination, found that the small masses were made up of cancer-cells. The man remained well for six weeks, and then passed more of the small masses with a little blood. Then frequency of micturition came on, and the man died last March. The clinical interest of the case consisted in the fact that Dr. Dickinson's correct diagnosis in July was resolutely disputed, as the patient presented no other symptom of disease than the passage of the bloody urine.

Dr. John Murray showed an inflamed Parotid Gland, and a Dicssecting Aneurism of the Arota, removed from a man who went about without any serious symptoms of disease till within a few days of his death. Dr. Crisp starte discussion on the relation of an atheroma, stating his belief that the latter followed the former; the progress of the disease was was then arrested by ossific deposit, as we understood him. Dr. Crisp did not think that atheroma often precedes the formation of aneurism. Mr. Myers referred to the fact that in soldiers, aneurism occurs without prior atheroma in vessels; and Dr. Church acknowledged the difficulty of saying which is primary in certain cases. Dr. Bastian believed that the change leading to aneurism is, in the first instances, fibroid change; whereupon Dr. Green remarked that if he understood atheroma aright, it was "fibroid" in character in its early stage, and that the fibroid change alluded to by Dr. Bastian is the early stage of atheroma. Mr. Hulke said that if Dr. Crisp meant by atheroma the formation of earthy plates, which is regarded as the final stage of a long series of changes, then he was right in his opinion; but there is an early stage of cell proliferation which undoubtedly autecedes aneurism, save in traumatic cases.

Dr. Bastian made some interesting observations on the Formation of Bacteria. He had never found vegetable organisms in the blood of patients suffering from septic disease, but he had discovered moving particles in typhus purpura, and some other diseases, produced by offsets of the blood-corpuscles that separate and become free, or by some change in the blood-plasma, by which small particles of protein matter are formed free in the fluids of the body.

Dr. Duckworth exhibited a Single (right) Kidney enlarged compensatorily, it being the only one in the body. It weighed 9 oz.

Mr. Gay showed a Recurrent Tumor of the Mamma.

After several other specimens had been handed round a few words from the President closed the meeting.

HARVEIAN SOCIETY.

EXOPHTHALMIC GOITRE.

An important contribution to the clinical history of exophthalmic goitre, a disease which has recently been brought prominently before the notice of several Societies,—was made to the Harveian Society by Dr. W. B. Cheadle, at a late meeting. Dr. Cheadle has met with eight cases of this disease during the last eighteen months, and of these, six exhibited its three leading features —viz., palpitation, enlargement of the thyroid, and prominence of the eyeballs, in a marked degree. In the two remaining cases, one of the three great symptoms was absent; in one there was no goitre, and in the other no exophthalmus. Seven of the cases occurred in females, and one only in a male. In the latter, no cause could be discovered on most careful and repeated inquiry which would account for the attack. Of the seven cases occurring in females, four were associated with disordered menstruation, one with the advent of puberty, and one with the final cessation of the catamenia. Five of the women were anæmic, although not in any extreme degree, but the remaining two, and the man, were full-blooded and robust. In every case palpitation was the first, or one of the first symptoms noticed, and the action of the heart always rapid and forcible The pulse was generally full and jerking, and ranged between 84 and 144, being, however, rarely found in any instance below 100, although showing great fluctuations between the limits. The temperature had been carefully registered in most of the cases, and found to be generally above the normal—in one case as high as 101°,—showing, however, like the pulse, considerable variation. In one case, which had been under observation for above a year, although recovery had appeared to be almost complete for some months, the pulse remained above 100, and the temperature about 99°. Observations were made to determine whether any difference existed between the temperature of the cheek and that of the axilla, or between the two cheeks, with th view of obtaining evidence respecting any affection of the cervical sympathetic. The results showed a general difference of half a degree in favour of the axilla, and corresponded with those obtained from persons in perfect health. In one case, however, the temperature of the cheeks was found to be two degrees lower than that of the axilla. This was observed twice only, the temperature having the normal relations as in the others, on all other occasions. In no instance was any material difference between the two sides of the body discovered, either in the cheeks or axilla. The pupils were found to be somewhat dilated, but responded readily to light and atropine, except in one instance, where there had been severe inflammation of both eyes. The impulse of the heart was always increased, and accompanied by arterial throbbing. In no case could hypertrophy or distinct organic disease be made out.

Amongst other symptoms observed in the majority of cases, were irritability of temper, great nervous excitability, flushing of the face, and increased palpitation on the smallest excitement or exercise, epistaxis or diarrhœa, and profuse perspirations. In the case of the man, all the three principal symptoms were strongly marked, and the pressure of the goitre produce grave dyspnœa. The circumference of the neck measured 17¼ inches. Iodine and glycerine were applied under oiled silk, and ten-minim doses of the tincture of iodine given internally. The goitre rapidly decreased in size, all the symptoms abated, and the neck was eventually reduced to a circumference of 13¾h inches, The iodine was given internally for nine months, with short intermissions only from non-attendance without producing any increased palpitation or other ill effect. A second case, in which the goitre was large, and the other symptoms severe, was treated in the same manner with equal success. In one case only out of six in which iodine was given continuously for many weeks, it was deemed necessary to discontinue its use on account of increased palpitation following the administration of fifteen minim doses.

In considering the bearing of the evidence afforded by these cases upon the nature of the disease, the author observes that increased action of the heart was not only an invariable symptom, but also one of the earliest in point of time, as in the cases related. If the sequence were real, the congestion or hypertrophy of the orbital cushions and thyroid, might be explained as a result of hyperæmia from increased cardiac and arterial action. But the case of injury to the cervical sympathetic lately brought before the Medico-Chirurgical Society by Dr. W. Ogle seemed to show that mere hyperæmia was not sufficient. There must be something in addition, a nerve stimulus which at the same time sets the heart going at such an unwonted pace. The excessive cardiac action being viewed as the key to the series of phenomena, it was necessary to go a step further back, and seek the nerve source of this.

The author considered the morbid changes found in the cervical sympathetic on post-mortem examination, in a number of cases during the last few years, quite inadequate to explain all the phenomena observed. If the cervical portion of the ganglionic system were alone affected, it was, *prima facie*, improbable that both chains should be implicated at the outset in every case. These chains had been shown by experiment to have singulary independent action; and yet, in the cases observed, no difference of temperature between the sides, such as lesion of one chain would produce, could be detected. Nor was there any disparity between the cheek and axilla, except casually in one case; showing that the morbid condition, whatever it might be, was not limited to one chain of ganglia only, or to the cervical portion only.

The symptoms of exophthalmic goitre corresponded partly to paralysis, and partly to irritation of the sympathetic. The increased heat and arterial action were consistent with the former, the cardiac excitement, the exophthalmus, and the dilatation of the pupil with the latter. Symptoms indicative of such opposite conditions were difficult to reconcile; but they appeared to show that the sympathetic system was in some way or other largely implicated.

The rapid, jerking pulse, persistent palpitation without organic disease of the heart, or acute disease, to account for it, and perhaps increased temperature, were suggested as valuable aids towards the diagnosis of the complaint in its early stages; and some sphygmographic tracings were exhibited illustrative of the difference of the pulse in this disease and in simple anæmia.

Editorial.

THE MONERA, THE LOWEST FORM OF ANIMAL LIFE.

Have any of our readers heard of the Monera? If not, we will illuminate them by giving a sketch of the lowest forms of animal life that have hitherto been discovered, and to which the above title has been applied by Prof. Hackel. It is not long ago that the Amœba was held to be the the simplest existing organism; and indeed the naturalist and the microscopist may well ask what can be simpler than a particle of animal jelly no bigger than the point of a pin, unenclosed by membrane or cell-wall, and in which a nucleus and a contracting vesicle, or vacuole, can alone be seen? Surely this is the extreme of simplicity. But as we are told that in the lowest depths there is still a lower deep, so in these rudimentary organisms successive grades are found, each of which is complex, and might be regarded as a superior being to the one below. The presence of a nucleus and of a rhythmically contracting vacuole constitute such marks of superiority in the Amœba, when compared with the class of creatures we are about to describe. Their presence indicates a rise above the dull dead level of homogeneity, and for aught we know an amœba may congratulate himself on his superiority in structure and energies to the *canaille* moners around him. At any rate he takes advantage of it. The beings in question were first noticed by Hackel during a visit to the Canary Islands, where he found one form, the *Protmyxa aurantiaca*, cleaving, in the form of just perceptible red dots, to the shells of a certain cephalopod. On examining these red spots with the microscope he found that they consisted of a reddish finely-granular spherical mass enclosed in a transparent homogeneous capsule. "Why this was an egg," some will exclaim. Not at all; for (note the differences) in the first place it contained no germinal vesicle, spot or nucleus; and secondly, its subsequent changes were totally opposed to that assumption. It was the animal, if animal it is to be held, in a state of repose, quiescent, encysted. After a time the finely-granular orange-yellow mass breaks up into a mass of smaller balls, like shot in a spherical cartridge, not, however, by continuous division, but as though many centres of attraction had simultaneously formed none of which, however, have any cell-wall or membrane around them. By-and-by the capsule bursts, the spheres stream out of the rent, and in doing so assume a tad-pole like shape, the head remaining globular, the tail fining off to an invisible point, and the whole wriggling, lashing, and wandering through the surrounding water. Soon the movements become tardy, and the creature settles down to commence a new stage in its existence. It retracts the ciliary appendage or tail, and shoots out irregularly-pointed and dentated processes, termed pseudopodia, from all parts of its circumference. These seize on minute diatoms, radiolaria, and the like, and, though themselves consisting only of a matrix, with a fine mist of granules scattered through it, rapidly appropriate the softer structures of such organisms. When well supplied with food they rapidly grow forming dendritiform processes, and fingers which creep slowly from point to point. The granules present in the protoplasm enable the eye to perceive that active movements are taking place in the semi-fluid substance of which it is composed. When a fresh supply of aliment, a delicate morsel, is met with, a rapid stream sets in to that point, and the sarcode, creeping onwards —to compare great things with small—like an avalanche, overwhelms and invests the victim. The juices sucked out, the exuviæ are thrust out or left behind as the creature advances in its destructive course; for it envelops, perhaps after rendering helpless by stinging, animals far more active than itself, and no armor is so close that this subtle sarcode cannot penetrate. When it has attained considerable size, vacuolæ or clear spaces form in it; and after a time it probably becomes encysted, to rise again, like a phœnix, if not from ashes, at least from the grave of its former self. Our space is limited, or we would have added a few lines descriptive of Professor Huxley's Monera, if he will allow us to call it so, the Bathybius Hæckelii, that cleaves to the sounding apparatus as it rises from the profound depth of 2000 fathoms, from darkness and silence to light and life and sound, a similar fragment of jelly, but capable of forming a few spicules and shell-like discs of calcareous matter, the first effort after the procurement of food being thus the formation of a skeleton or a support to its yielding body—the first stage of that wonderful series of processes which ultimately result, as so many culminating points, in those forms we call the heads of classes n the vegetable and animal kingdoms.

◆

HOSPITAL APPARATUS.

Among the various untoward results that follow from the English method of maintaining hospitals —by self-elected lay committees, and by fierce competition for "voluntary contributions," none are more noteworthy than the defects even of the best of them in matters which only medical practitioners can appreciate or understand. To the majority of subscribers, the number of patients treated is the proper measure of the usefulness of the institution; and the "salaries and wages," with the bills for tuition, wine, and physic, are the only legitimate expenses. The result is that every general hospital in London is lamentably deficient in proper apparatus for the investigation of disease, or for the employment of any remedies that cannot be supplied in bottles by the dispenser. The surgeons, who have to operate, are careful to be provided with proper instruments; but the physicians usually go to the wall. In most hospitals there is some energetic member of the staff who has a hobby, and who clamors until his wants with regard to it are supplied; but there is nowhere, as far as we know, any large recognition of the principle that scientific apparatus of all kinds necessary for clinical or therapeutical research should be supplied to an hospital as one of its first and most essential requirements, and should form part of the furniture of every ward. And yet the recognition of this principle is clearly essential to the fulfilment of two of the chief purposes of an hospital—the advancement of medical science and the conduct of medical teaching. The thermometer and the microscope, the test tube and the reagent, the ophthalmoscope and the laryngoscope, and all similar helps to investigation or instruction, should be at hand whenever they may be wanted. Their absence is often detrimental even to the patients in the wards; but it is always, and far more seriously, detrimental to the students. Students hear and read of such appliance; but, unless they come to regard them, they go forth to their work in life with a determination not to be bothered with such incumbrances; and they learn to cultivate the formation of conclusions by methods of ingenious guessing. The money required to furnish proper apparatus might be judiciously saved by striking off a few thousand of the out-patients, whose cases are too often neither investigated nor recorded, but who swallow drugs without stint, and swell the imposing muster-roll of numbers by which John Bull's capacious pocket is appealed to. It is not only in these comparatively recondite matters that our hospitals are at fault, but absolutely in the means of treating patients in accordance with the day. As an illustration, and one calculated to impress the public as well as the profession, we believe there is no general hospital in London that has any approach to a proper service of baths. There are baths enough for purposes of ablution, but not enough for purposes of treatment. And yet there is reason to believe that baths are of the greatest possible value in many acute diseases; and that in burns, and some other injuries, continuous immersion of the affected part has produced favorable results quite unattainable by any other methods. Take, again, the therapeutical applications of electricity. At two hospitals there is electrical apparatus, either complete or approaching completeness; but at many there is probably nothing more than a rotatory magneta-electric machine. Take gymnastics, or apparatus for calling particular groups of muscles into activity, and the same, or even a more complete, deficiency will be found. And such deficiencies must become more glaring as time goes on, until the general management of hospitals is placed under some kind of medical supervision, with a view to the efficiency of treatment rather than to the numerical increase of patients. At present our medical officers have little actual control over the institutions that they serve; and these institutions are starved by lay committees in in matters which are essential, in order that they may make a deceptive show of usefulness to the public. We have heard strange stories about the things that are here and there "conspicuous by their absence;" and we would urge upon hospital physicians and surgeons to initiate a reform by pressing all the scientific wants of their committees, and by suggesting that the summary dismissal of the out-patients would furnish means by which these wants could be supplied.

Odd Papers.

THE SICK POOR OF PARIS.

By Blanchard Jerrold.

No. V.

THE NEW CENTRAL STORE.

The immense range of buildings on the Boulevard de l'Hôpital, close to the Salpêtrière (to be shortly vacated by the hosts of old women who now occupy it), is the central store-house of the Asistance Publique of Paris; the completion of which has enabled the order-loving authorities of the Seine to get the supplies for hospital, asylum, Bureau de Bienfaisance, and Maison de Secours under one authority, and in that methodical trim which makes the production of the smallest *tisane* vessel the affair of a moment. Not a baby's cap can stray hence, and not be missed. A handful of lentils—almost a haricot, white or red—would form the subject of an inquiry. We smile as we pace through these apple-pie regions, turned over at the entrance to the broken bed-chair department, or the baby-linen gallery, to a fresh functionary of sharp, military appearance; but the care and precision mean economy. It is affecting to pause, for instance, in the Hospital Broken Department; for the débris speaks of all the sad circumstances of many deaths. The old men's chairs, greased where the tired head has rested; the piles of severed arms and legs; the little bed-cupboards unhinged and splintered; the disjointed mechanical seats; and then the wonderful old clocks and broken ornaments which have been treasured by the poor owners,—have tales upon the surface of them, and they are all of misfortune. The mark of poverty deepens the mark of suffering upon all. It is upon the ancient sedan-chair in which hundreds of unfortunate wretches have been borne away to the Maison de Santé. Bedraggled feathers are here, and, the attendant tells, are very valuable articles; brilliants, for instance, may be seen amid the cast-off wear of the hospital or asylum poor. It happens in this way, I should remark. Say a man is carried to the hospital, and dies there. His personal belongings become the property of the Assistance Publique; and in this way brilliants of price fall into the hands of those who collect the tatters of the sick wards. M. Husson is not exorbitant however. The relatives may reclaim the treasure found, on payment of the fees for the hospital treatment—which are low enough. The rule is to sell all this lumber of the dead by auction every three months.

But let us take a methodical stroll through the stores, ushered by the intelligent and courteous commissariat officer of the poor, who exchanges salutes with his fellow-officers, touching his kepi in true military style, and who is set apart by the Director to accompany us throughout our inspection.

We are first ushered into the textile fabric stores. They are disposed in blocks, lettered and numbered, something in the fashion of a Manchester warehouse. Blues and greys are the prevailing colors—for the old and for the young—for the Salpêtrière crone's winter petticoat, and the frocks of the *enfants assistés*. That which charms the visitor is the exquisite order, neatness, and cleanliness. Here are the stacks of clothing for the *neuveaux-nés*. The dark pile is the trowsers cloth of the Assistance *palefreniers*. Amiens and Lille provide the bulk of the linen fabrics—the linen and sacking, from the finest to the toughest, with which straight waist-coats are made. The hospital sheets, pillow-cases, mattress-covers, &c., are all of carefully regulated quality. There is a special fabric for the *employè's* sheets and the surgeon's apron. The bandages for the patients are of the softest texture. Since 1860, all the fabrics in use in the establishments of the Paris Assistance have been distributed from these long galleries, in which they are kept in bulk. There are stacks of cottons (*Indiennes*)—browns, blues, and greens—neat and pleasant patterns for the young, making the wearer a less dismally marked-off individual than the child of charity is in England. There are mountains of woollen socks, bulky pieces of spotted linen for babies' caps, and snowy heaps of material for those ample head-gear which the good sisters of the hospital and the Maison de Secours wear. The old men's cloth is a deep-blue, and it is piled in vast stores of comfortable winter clothing, which is distributed to the Bureaux de Beinfaisance when the cold comes. The thick petticoats and children's clothing, the flannel waistcoats and jackets, are all beautifully finished, and of sound and solid material.

I should observe that the greatest care is taken by the authorities to secure the quality contracted for. A commitee of eight or ten experts meets to pass each description of goods. The manufacturer has no notice of the day on which his consignment is to be examined; so that the most impartial opinion is secured. Not a wooden spoon is received without having undergone this test, and having been compared with the contract models (which are methodically distributed in a separate department for constant reference). All condemned things are removed to a house apart, which is near the test house, and which was pretty full of bales when I saw it.

The work of an immense woolen and linen department like this (along the central line of which trucks conveying stores to the openings to the court-yard are continually travelling), is a useful force, which the Assistance of Paris was not likely to neglect. The poor find work in making the clothing of the poor, either at home or in the asylums.

From the linen and woolen galleries, I passed to *salles* where the hardware and crockery of the hospitals and asylums are kept. These articles are so labeled and stacked upon stands that the superintendent can tell the number of *crachoirs* or night-lamps he has in store at any moment; and can satisfy a demand from any establishment without a moment's delay. The crockery and hardware governor was an exceedingly attentive and intelligent official; and went into the beauties and uses of all he had in store with zest. He touched on the excellently thoughtful contrivance of the *crachoir* which prevents the patient from seeing his expectoration; and the artfully contrived plates, which it is scarcely possible to break, without deliberation and a sledge-hammer The *tisane* pots were, of course, in formidable numbers; as I anticipated, after having glanced along the line of vats in the *tisane* department of the Lariboisière. I passed in review stores of soup-tureens (for the messes of twelve of Bicêtre); little goblets and rounded spoons for the children of the *crèches*; pharmacy phials and glass of every description brushes; the *vieilesse-hommes* tumblers, all marked with the initials "A. P."; oil cans, with an external regulator by which the amount left can be told (so that there is no occasion to open it from it from the time it leaves the store until it is returned empty); knives; ladles; pots; scales; coffee-grinders; pestle-and-mortars; the copper *marmite*, beloved of the French cook who estimates the rank of a family by the num- (ber of them in their kitchen); milk vessels. Of these milk vessels I should say one word. They are ingeniously contrived. Say they are filled in the dairy establishment at Bicêtre, to be sent to the little ones at the immense nursery of the Enfants Assistès; when the vessel is filled, it is locked. It cannot be tampered with on the way; and only the director of the Enfants Assistês can open it. In this way quality and quantity are secured; and the pump plays no part in the Assistance dairies, beyond that of keeping the pails clean. The variety of articles is curious. Tubs, baskets, feather-brooms, gridirons; a light metal crate, contrived to lift patients and carry them; leg-rests, crutches of every sive mouse-traps, clothes-pegs, sankals for the vapour bath, the model hospital bed, rush bottom chairs! And beyond this miscellaneous store was the pattern room, in which there was a sealed sample of every article made for the store.

From the hospital and domestic articles, I was led to the food department. The store contained sacks of haricots, peas, rice, lentils, semolina, &c., —all of the best quality, and approved by a tasting commitee, in whose presence samples are cooked. The indifferent consignments are condemned, and the contractor is bound to replace them by an equivalent of good articles before he can remove the bad from the store. When he fails within a given time, the authorities buy at his expense to the extent of his deficiency. Before he can become a contractor, he must make a money deposit, to cover any risk by his *laches*. Over the stores of fabrics, and crockery, hardware, &c., are the long galleries of made-up clothing, grouped in squares upon lofty stands, each square being that of an hospital or asylum, or a Bureau. The gallery of children's clothing is that by which the march of the visitor is opened. The place is airy and sweet; and, as the housewife says," you might eat your dinner off" the polished floors. Packets of layettes for the Bureaux de Bienfaisance are in astonishing numbers. The attendant explains that each complete layette consists of twenty-seven articles. Another bundle (they are neat as confectioners' parcels) is for a child from seven to twelve months of age, and consists of fourteen articles. Then there are trouserings for the orphans who are scattered about the provinces, for growths ranging from one to eighteen years. The "toilette" of an orphan child of one year, of two, of three years; the "*trousseau*" of an orphan girl who has reached her eighteenth year,—all are folded in snowy linen of excellent quality.

The hospital linen and clothing fill the principal upper galleries. Here is the Lariboisière group; here that of La Charité; and here, again, the Lourcine. The sheets are of four qualities—namely, one for the Assistance *employés*, one for the sick, one for children, and one for the aged. The clothing is cut in the Magasin, and then worked by the poor at home, or by the women of the Salpétrière—even by the mad patients. So close and complete is the system that not a yard of linen nor a child's pinafore can be lost. The attendant said to me that, if woke up in the night, he could walk in the dark and put his hand upon any package from any of the hospital reserves that might be ordered. These hospital stores are the stock each hospital has in excess of its regulated supply. In each hospital, a stack, in the Lingerie, exactly resembling its reserve compartment in the Magasin Central, will be found. The attendant was thoroughly proud of his domain. Pausing before a very bulky reserve, he said: "See the St. Louis stock in reserve; all new sheets—all good, sound linen." And the fine flannels for newly-born infants, the solid grey blankets, the exquisitely white bundles of under linen, were a striking sight all along the gallery.

Beyond the hospital reserves were piles of hospital iron bedsteads, spring matresses, and the light warm *édredons*, under which almost the poorest folk of Paris contrive to sleep in the winter; baths, &c. A seperate building flanks the Magasin, between it and the Salpétrière. It is a very long, narrow room, and is to be in a few months the great central mending gallery of the hospitals of Paris. The Assistance, in addition, are putting up machinery for wool-carding.

The cutting-out department, and the depôt where articles condemned to figure at the quarterly sale are gathered, complete the Magasin Central, in every corner of which is to be seen the moral and pecuniary value of order.

No. VI.

THE HOUSE OF HELP.

The sound public economy of keeping the public health at the highest attainable pitch is pretty generally admitted, and pretty generally neglected, in England. Directly the maladministration, blundering, and confusion of the *régime* of which Gwydyr House is the centre are attacked, and a speaker or writer ventures to draw upon his foreign experiences for an amendment or a remedy, he is met with the old cries, which cover old errors, and opposed with predjudices which, albeit of ancient date, are in the heartiest strength even now. I have been greatly struck with the array of facts made by Dr. Rogers in his recent address to the Poor-law Medical Officers' Association, because they are all to the discredit of the English public men, who have been patching our Poor Laws for so many years past. These facts are blunders and shortcomings, which even a peep at our more orderly neighbors would have taught them to deal with long ago. When I survey the establishments of the Paris Assistance Publique, and mark how they fit in one with another, all working in harmony to a common end; one real vital administration in the centre making its vigour and heat felt to the remotest members of its body of *employés*; and then turn to the records of mistakes, and descriptions of bad payment and bad treatment, of medicines held back till the sick poor fall into the house and the temporary public patient is shuffled by ignorant guardians and underpaid medical officials into chronic and, to the State, costly pauperism;—I am indeed earnest in begging your readers of professional and social authority to come hither and see how speedily much of the mischief over which Gwydyr House presides might be got under.

To begin with. They who would succeed as reformers of the sick poor treatment in England must approach the British ratepayer through his breeches-pocket. Prove to him that sound public health means empty workhouses, and consequently very low rates. A sick creature is a dear creature. Our shrewd neighbors understand this, and have directed charity carefully to the convalescent poor. In London you are discussing convalescent hospitals. In Paris the poor sick workman, who needs fresh air and nutritious food to get back his normal allowances of heat and muscle, can repair to the splendid establishment at Vincennes; the workwoman to the Vesinet. One of the finest charities in the French capital is that which gives timely help to the poor as they issue, discharged, from the hospitals. The London plan is to break up the home, to stint the sick diet and the drugs, and so keep up the stock of pauperism in the workhouse.

Out of the unassisted or ill-assisted sick poor of England, we have been told by an authority none have ventured to contradict, 72 per cent. of the English paupers, who collectively cost about £7,000,000 sterling per annum, are made; and yet the Poor-law Board will not move to stay the manufactory. The workhouse medical officer is underpaid and overworked; the methods of distributing the drugs he orders are left to the will of guardians, or if he has contracted to supply medicines as well as advice, it is at so low a rate that he cannot afford to give his patients the drugs they require! I have already dwelt on the manner in which these things are regulated in Paris, and regulated, let me add, without striking a death-blow at "local self-government." The Central Store, the Central Pharmacy, the Central Meat Depôt, feed the twenty arrondissement Bureaux de Bienfaisance—each according to the wants it makes known. The arrondissement Bureau, in its turn, supplies the Maisons de Secours, or houses of help, within its circumscription. Every part of Paris is duly provided with its House of Help, to which the poor resort in sickness or in an emergency. And the House of Help is a dispensary, as well as a place for medical consultations, and distributions of clothing. It is a pleasant sight to see how smoothly all the duties proceed of a morning; and how apt and gentle the sisters are in helping the poor to carry out the doctor's orders. It is the humane air that is upon the scene—the seemliness and the quiet, which strike the visitor who can remember the kind of treatment which the English workhouse poor experience—to our shame—but, let this be evermore insisted upon, to our wasteful cost as well.

There is a House of Help on the north side of the Mairie, by the church of St. German l'Auxerrois, to which the properly curious Paris visitor may repair with advantage, furnished with a note from the Central Bureau. It is an excellent sample of the best of these establishments: a school; a consulting establishment; a dispensary; a store for linen that may be wanted on an emergency. It is administered and worked by a few gentle sisters, who surely here are doing woman's proper work.

Pray is there any sound reason why Houses of Help should not exist in London, and under the control of a central board, as well as that of an arrondissement bureau locally administered? The local authority is valuable; and is sensibly carried out in Paris, where it is an honor in one's neighbourhood to be of the committee of the poor. There are in Paris no growths of poor through the maltreatment or neglect of the sick, like that which Dr. Rogers describes at Birmingham, and in several metropolitan parishes, where the manner in which the sick shall be treated is left to the temper, whim, or taste of guardians.

The care with which the sick poor are nursed back to perfect health by the plans now in full operation in and about Paris comes from that far seeing providence which is a prominent French characteristic. Inquire, and you will be told that to give health to the poor is the very cheapest way of assisting them. Can there be a doubt on the subject? The only capital they have in the world is their store of strength; let this fail, and the State must provide for them. Surely, then, it is best to prop up their strength.

The Poor-law Medical Officers' Association are at the root of the evil, when they insist on a complete reform of the medical treatment of the English poor (rather in the direction of Paris than of Ireland). If homes were broken up in Paris, as they are in London, because they want temporary relief, Napoleon's capital would not have its actual general holiday look. More timely help in England would decrease the pauperism, and improve the race. For the consequences of our fundamental blunder spread. The sick poor man and his wife are neglected; they create children with hereditary taints and defects—in other words, creatures who, under the Poor-law system, must become paupers or criminals. You save a bottle of quinine, and add a family's keep to your liabilities. You will not nourish the convalescent poor man into strength for work: he languishes, and you must house him to the end of his days, and rear his family of sickly children.

Years ago, when I was going over the establishment of the Enfants Assistés, the director answered my observation, that so vast an establishment must be costly, with a Frenchman's shrewdness. "It is much cheaper than prison," said he. "We must get a home for them, and teach them to maintain a home for themselves, or society will have to keep them altogether." With us the workhouses are the entailed inheritances of the children of our streets. We have not reached yet even that elementary providence, the proper treatment of the pauper invalid, that he may be enabled to return to work and independence.

No. VII.

THE CENTRAL HOSPITAL ASYLUM, AND OUT-DOOR RELIEF STORES.

Count Rumford, writing in 1796 of "Fundamental Principles of Establishments for the Poor," observed: "However large a city may be, in which an establishment for the poor is to be formed, I am clearly of opinion that there should be but *one establishment*—with *one* committee for the general management of all its affairs, and *one* treasurer. This unity appears essentially necessary, not only because, when all the parts tend to one common centre, and act in union to the same end, under one direction, they are less liable to be impeded in their operations, or disordered by collisions, but also on account of *the very* unequal distribution of wealth, as well as of misery and poverty, in the different districts of the same town." The Count divides his city into sections and sub-sections; subordinating the minor bodies gradually to the common centre of authority, exactly on the plan of the Assistance Publique of France. The fidelity with which the French have followed the principles laid down by our adventurous and energetic countryman is marked especially in the organization of the various central establishments, whence the hospitals, asylums, and arrondissement bureaux are supplied with the necessaries which are distributed among the sick and poor. There is a Central Bakery, a Central Wine Depôt, a Central Butchery, a Central Pharmacy, and then there is the great Central Magazine—a vast establishment which has been lately constructed near the old Salpêtrière, and remains to be perfected by a central Buanderie, or laundry.

Let us glance at the uses and manner of government of these institutions, which have been established for the sake of order and economy. The Central Bakery of the Assistance Publique of Paris is housed in the old Hôtel Scipion. In this establishment all the bread for consumption in the hospitals and asylums, and for distribution to the poor by the Bureaux de Bienfaisance, is made and baked. It is interesting to note how the Assistance authorities have watchfully taken advantage of every improvement by machinery in the manufacture of bread. So far back as 1853 the bread was made by steam machinery; in 1856, in order to discover whether it was not possible to produce bread at a less price than that of Parisian bakers, the Prefect of the Seine installed a commission, the result of which was that the Boulangerie bought corn instead of flour. With their own mill as well as their own bakery, all conducted on a vast and economical scale, the municipal bread-makers found that they could produce the first necessary of the poor cheaper than even the scale established by the Government to meet times of dearness. In presence of this fact, it was decided that the Boulangerie Centrale should, in the first place, supply all the clients of the Assistance Publique; and, in the second place, that its surplus bread—that is, the quantity the establishment could make in excess of the Assistance demand—should be offered at the cost price in the public markets for the benefit of the poorest of the working population. The example of the Boulangerie Centrale, showed, at any rate, that, in a time of excessive dearness, a bakery powerful enough to produce from 20,000 to 25,000 kilogrammes of bread daily (about 45,000 lb.), could undersell even the town bakers, whose tariff was supplemented by the Government Bakers' bank. The Hôtel Scipion became the centre of many experiments towards the perfection of bread-making. The scientific investigations and ingenious processes, first of M. Mègé-Mouriès, and afterwards of M. Salome, late director of the bakery, have ended in the production of the most nutritive as well as the most economical bread. The cheapness and superior quality of the Assistance bread are so far beyond dispute that it is welcomed in establishments that are independent of the control of M. Husson. Many private charities provide themselves from the central bakery; there are depôts for the sale of this bread in the town markets; it is the bread which the pupils of the Rollin and Chaptal colleges consume; it is eaten by the Pompiers and by the Garde Municipale; and it is provided in the winter economical kitchens which are dotted about Paris, under the patronage of the Prince Impérial. The Scipion bread is, in short, in high favor by reason of its abundant nutritive qualities, and its cheapness. Now, this bread is produced at a profit, calculated at an average of three centimes per kilogramme—say, roughly, at one halfpenny profit on a 4 lb. loaf. This is not much. The profit might be increased if, in the first place, the bread, which is sold at the rate of the cheapest, were not really a fancy bread; and if, again, it were measured by the town bakers' nominal weight, instead of the real weight.

M. Husson, in his last report, assures the municipal authorities that the Scipion bread would be even cheaper than it is if the flour-mill had water power instead of steam power produced with very expensive fuel. Scipion bread, he adds, is an unalloyed wheat bread of the first quality; whilst the Paris bakers mix bean-flour, or flours of inferior quality, even maize-flour and potatoes with their loaves. It is with justifiable pride that the Director describes the Scipion bakery, not only as a central establishment which provides the cheapest and best bread to the sick and poor, but as a scientific school for bakers, in which every experiment for cheapening the staff of life, and improving it, has a hearty welcome and a generous trial.

In 1853 a Central Market Administration was organized for supplying all the Assistance establishments of the city with fresh food brought from the country, as vegetables, &c., at wholesale prices. Through the agency of this administration, which has succeeded admirably, the hospitals and asylums are supplied every morning with their vegetable diet in the best condition. The marketing for the poor conducted in the Halles, as I have said, at wholesale rates, is to the extent of more than £54,000 annually.

We now turn to the Central Wine-cellar of the poor. The extent of it may be gathered by the few salient points of the last report on its operations. Within the year, 2,150,196 litres of wine were distributed to the hospitals and asylums, at a cost of 1,216,084 fr. The wine for the sick and aged poor costs a fraction over 62 c. within the *octroi* gates, and fraction over 43 c. without the gates. For even the wine and meat of the poor pay the hateful *octroi* duty at the city gates—the Assistance wine to the extent of 362,300 fr.

The operations of the Central Butchery for the poor are extensive. About 1,500,000 kilogrammes—say 3,000,000 lb.—of meat are furnished annually, at the average cost of 1 fr. 20 c. the kilogramme—about 6*d.* per lb., nearly a penny of this price being *octroi* duty.

The Central Pharmacy distributes drugs, &c., to the hospitals and asylumns, the Maisons de Secours, &c., to the value of £44,000 yearly; by far the greater proportion, of course, going to the hospitals. Provisions foreign to their main character are kept at some of the central establishments. For instance, the oil and candles for the whole Assistance service are warehoused at the Hôtel Scipion, while soap, soda, &c., required for the Assistance washing, are stored both at the Hôtel Scipion and at the Central Pharmacy.

But the vast Magasin Central, lately constructed on the Boulevard de l'Hôpital, will bring complete order into the economical warehousing system of the Paris Assistance Publique.

The Magasin Central is built with that regard for orderly division and subdivision which characterizes every French public administration. It is to be the one immense storehouse from which the hospitals and asylums and Bureaux de Bienfaisance will be supplied with all needful materials, except bread and meat and wine; even the market administration is within its comprehensive jurisdiction. The ancient Buanderie of the Salpêtrière is to be centralized. And even the old women's work, which makes so striking a scene in the Salpêtrière — namely, the repairing nd maki hospital linen, bandsges, &c.,—isto be got under the hand of the chief of the Magasin Central. This work has proved a boon the old women: for it gives them easy emlpoyment, and yields them a trifle of money. On the other hand, it has proved a public economy.

Of this new Magasin Central M. Husso observes in his recent Report on the progresses and improvements in his department, that, embracing all the sources of supply for the material wants of the Assistance, it will prove a precious instrument of thorough control and of economy. While its service will lessen the labor of the managers of the hospitals and asylums by relieving them from all the anxieties of supplies drawn from various quarters, it will simplify the work of the Assistance central authorities; and simplification in administration is always a progress towards a saving one.

Let us now enter the great Magasin, the approach to which has more the aspect of a military centre than of a city's store for the supply of its poor. The officials at the gate are of strictly military appearance, and the unpractised observer of French administrations would imagine that he was entering a building devoted to the protection of formidable war material, and not of haricots and lentils, the blue woollens of the aged poor, and the beds and the linen of the destitute sick. But the Magasin Central is so new, so interesting and so instructive a store, that I must devote a separate communication to it.

Medical Annotations.

"Ne quid nimis."

ON THE PRODUCTION OF FALSETTO NOTES.

Dr. Marcet, in a short essay that has recently appeared, on the Falsetto or Head Sounds of the Human Voice, seeks to establish, through the phenomena observed by the laryngoscope, a theory of the production of falsetto notes which is essentially similar to that long ago suggested by Majendie and Mayo. These observers mantained that the falsetto notes are produced by the vibration of the vocal cords along only half their length. Müller, on the other hand, whilst regarding the chest notes as formed by the whole breadth of the laryngeal membranes entering into vibration, contended that the falsetto notes are due to the vibrations being confined to the margins or mere edges of the membranes. Helmholtz advanced the curious theory that the falsetto notes are caused by the removal of the mucus which constantly moistens the rim of the vocal cords, rendering their edges sharper and their weight less, so that, whilst their elasticity remains the same, they are capable of vibrating more rapidly: but this sharpening of the edges of the cords, if it really occur, would seem to be much more intelligible on the view propounded by M. Garcia, that it is produced by the action of the muscles of the larynx. Dr. Marcet starts by stating that we must assume the falsetto notes to be harmonic sounds, and proceeds to compare the vocal cords to the tongue of a reed instrument, which, if made to vibrate through its whole length and breadth, produces the full note, but if divided into nodal points, one or more of the internodes between which do not vibrate, produces harmonics. So with the vocal cords, which when vibrating along their whole length and breadth produce the chest notes, but when brought into contact for a portion of their length, and vibrating only through a portion of their breadth, produce harmonic or falsetto notes, clear in proportion to the accuracy with which the singer can deaden one or more entire internodes. "In fact," Dr. Marcet says, "there will then be a combination of two harmonics—viz., the one belonging to the vocal cord considered as a membrane, the other to the cord considered a true cord; the result will be the emission of a firm, clear, sharp head note." Dr. Marcet states that, in his laryngoscopic observations, he actually did observe the cords to be shortened, and applied tightly against each other throughout the whole of their length, in the production of falsetto notes; and this, he believes, was effected through the contraction of the arytenoideus muscle. He further remarks that in passing from a chest to the same falsetto note no difference in the vertical width of the crico-thyroid chink is observable, though the pitch of the latter is a whole octave higher. We have not space here to discuss Dr. Marcet's ingenious theory, but we would point out to him that Mr. Bishop observed the crico-thyroid chink to open at the moment of transition from the chest voice to the falsetto, indicating the relaxation of the vocl cordsa, the whole larynx at the same time descending; and so far supporting the views of MM. Pétrequin and Diday, that the falsetto notes are flute notes resulting from the vibrations of the column of air in the trachea, the varying length of which influences the note produced. There can be no question that a powerful muscular effort is put forth in the production of the falsetto voice; but whether this is only exerted by the arytenoideus, as Dr. Marcet endeavors to show, we think is still open to question. By his own admission, the vocal cords are in apposition throughout their whole length in the production of falsetto notes, which is scarcely in accordance with the idea of their division into nodal points; and we are not sure that it is *possible* for a tense membrane with a free edge to be thrown into nodes both longitudinally and transversely, as his theory seems to imply.

POISONING BY STRYCHNIA.

The question whether strychnia can, after ingestion by the mother, be transmitted through the milk to the infant has lately arisen in a case reported to have occurred at Lynn. A woman apparently in a state of delirium tremens, poisoned herself with strychnia, and when Dr. Lowe, the medical attendant of the family, arrived, she stated that she had poisoned both herself and her husband. She had just said this when she was herself thrown into a strong tetanic convulsion, but by the timely administration of remedies she recovered. The husband, however, succumbed. The child was found in its cradle strongly convulsed. The stomach-pump was at once used, but the child died. The contents of various parts of the body were sent to Dr. Letheby, who found strychnia in the stomoch, and gave his opinion that the infant had died from its effects. Dr. Letheby proceeded to say that he did not think the child would absorb the poison through the breast of the mother. He had never heard of such a case, but it might be possible. It may be that the quantity found by Dr. Letheby was so large that it could not easily be considered to have been ingested with the milk; otherwise the probabilities appear to be rather in favor of the discharge of the poison with the lacteal secretion. For, in the first place, it is unquestionable that many vegetable sapid and odorous substances, as the flavor of onions and turnips, aniseed and absinthe, the coloring matters of saffron, the purgative principles of rhubarb and gratiola, and the alkaloids of opium, are thus eliminated from the system; and secondly, although we cannot find, after considerable research, any instance in which strychnia has been actually shown to be discharged by the mammary gland, yet its powerful resistance to oxidising agencies, as shown by the capability of discovering it long aftor death, as well as its capability of dialysing through animal membranes, would certainly lead to the conclusion that, [under favorable circumstances, such as were here present, the poison might have thus been conveyed to the child.

ON THE INJECTION OF AMMONIA INTO THE CIRCULATION.

At the April meeting of the Medical Society of Victoria, under the presidency of Dr. Bird, Professor Halford read an interesting paper on the Injection of Ammonia into the Veins, with the cbject of demonstrating the perfect safety with which ammonia can be injected into the circulation, not only through the medium of the veins, but directly into the heart. Prefessor Halford detailed a series of experiments of a highly interesting character recently made by him, in which vital reaction had been shown to be the certain consequence of the employment of this alkali by injection. The "foolish temerity" with which the possibility of doing this safely had been denied by persons who had never attempted the experiment themselves was severely commented upon in the course of the discussion; and the value of Professor Halford's discovery was pointed out as bearing upon the treatment of all affections in which a powerful heart-stimulant is indicated; in proof of which Mr. Fitzgerald related a case of pyæmia, in which, though death eventually took place, life was considerably prolonged by ammoniacal injection. As a means of resuscitation in syncope from chloroform it was considered to afford a most valuable resource, and Mr. Gillbee stated his intention of employing it on the first favorable occasion. Professor Halford's paper did not entertain the question of the manner in which ammonia acts in antagonising the influence of snake and other poisons. That part of the subject, he reserved for a future paper. A letter, however, was read by Dr. Neild, from Dr. Day of Geelong, in which the action of snake virus and other similar poisons was shown to be ascribable to their power of paralysing the sympathetic nerve, and the effect of the ammonia traceable to its intense power of exciting muscular contractiont. Altogether the discussion, and the replies it evoked from the author of the paper, were full of interest. Tho President, in offering some observations upon the subject, warmly complimented Professor Halford upon the practical nature of his discoveries, and congratulated the University in that to the professor of its medical school belonged the credit of giving to the scientific world these most interesting facts.

VACCINATION FROM THE HEIFER ON AN EMERGENCY

The steamer *Florida*, belonging to the French Transatlantic Company, had, on its return to St. Nazaire from Panama, lost eight persons from small-pox, out of a somewhat large number attacked. The disease had been brought on board by a passenger from Colombo, who, coming from the Pacific, felt the symptoms of the complaint fully twelve days after embarking. Another vessel of the company, the *Nouveau Monde*, had orders to start from St. Nazaire a few days after the arrival of the *Florida* in that port. It was apprehended that small-pox might also break out on board the *Nouveau Monde*, and the revaccination of between four and five hundred people was deemed necessary. But lymph was wanting, and time was pressing. M. Lanoix, the propagator, in Paris, of the transmission of cow-pox from the kine, was applied to, and he at once sent to St. Nazaire a heifer inoculated with 150 punctures. The animal arrived safely, and was placed on board the *Nouveau Monde*, which started on the 8th of February. M Lanoix had received the intimation only on the 5th; and he had been careful to send with the heifer many tubes, which the surgeon on board filled and brought to Aspinwall, where some alarm was felt. From the report of this surgeon (M. Petit), it appears that a chambermaid was seized on the voyage with varioloid, she having been in a room on shore where some articles from the *Florida* had been placed. She soon recovered. This circumstance induced the surgeon quickly to revaccinate the whole crew, and most of the passengers, from M. Lanoix's heifer, and more than half the operations succeeded, though no one was put on the sick list. Subsequently the Company sent for M. Lanoix to St. Nazaire to revaccinate, with the assistance of the surgeon of the vessel, the fresh crew of the *Florida*, and also the crews of several packets in the harbor. Some bullocks were put board the *Florida*, and she sailed on the 8th of March, the animals being successively inoculated during the voyage to keep up a supply of lymph. Since that time, M. Lanoix has sent from Paris to St. Nazaire a vaccinifer heifer, for the use of the packet *Eugénie*, sailing for Panama on the 8th of March. These circumstances illustrate in a striking manner how valuable animal vaccination is in an emergency.

THE UNIVERSITY OF LOUISVILLE, U. S.

We have received a pamphlet entitled, "Commencement Exercises of the University of Louisville, Medical Department, containing Addresses by W. C. Maul, A. M., and Professor Lunsford P. Yandell, Jun." As the latter author made a very favorable impression upon us when we had the pleasure of seeing him in London, we turned to the pamphlet with some curiosity. We were at first puzzled, as one of the discourses of the "Commencement Exercises" is a *valedictory* address. But it would appear that it is customary with our cousins to give some advice to newly-created doctors assembled on the occasion when the new-comers begin their studies. Judging from the sound counsels contained in Dr. Yandell's address—though the language to us on this side of the Atlantic seems quaint, the custom is not bad. Our own introductory lectures have, on the contrary, this defect, that they often contain advice of use in actual practice, whilst the hearers are but embryo doctors. A feature of this pamphlet, rather unusual with us, is the speech of one of the newly-made physicians, full of hope for the future, and teeming with praise of the professors: the diction is high-flown, and approaches bombast. Dr. Yandell, however, does not conceal from his hearers the shortcomings and the dark sides of our profession. But we have rewards also, and the author says:—"In truth, you may very correctly judge of the civilization of a country by the estimation in which medical men are held in it. The worthy representative of the noblest people on this planet, Queen Victoria, delights to honor the conspicuously worthy members of our profession in her kingdom. And that wonderful man, the third in name, but hardly second in point of wisdom, the peerless-minded Emperor of the French, is scarcely behind the good Queen of England in rewarding medical merit." The author is very full and explicit on the "duties and qualities of the good physician." Here he says, "never tell your wife's secrets to your patients, nor your patients' secrets to your wife." On the subject of cleanliness Dr. Yandell remarks: "The healthiest people in the world, and the longest-lived, I believe, are the English of the higher classes, and beyond all peradventure they are the most cleanly." He insists on the necessity of pure air and good cooking; and with reference to the latter the author has the following bold outburst:—"Bad cooking, which spoils food however good in itself, is the cause, I strongly suspect, of half the sins of the world, and of quite three-fourths of the domestic infelicity. If I had the training of a girl, I should charge and beseech her, above all things to be amiable and unselfish, and a good cook. There is little doubt in my mind that the bad biscuits of America are in a great measure to blame for the numberless homicides which render our country a bye-word among the nations. Bad bread breeds battle, murder, and sudden death. Bad cooking probably killed more Confederate soldiers than the bullets of the enemy. I am not sure that our Legislature ought not to pass laws making bad cooking, if by a servant, punishable as a felony, and if on the part of a wife, unquestionable ground for divorce." This is certainly a savory bit, and will frighten any *gourmand* intending a trip to Kentucky. But Dr. Yandell is in sober earnest when he speaks of the art of "giving advice," on the "duties of physicians and patients," and on the "bearing of doctors towards one another. We wish the Professor and his University much success.

MORALITY AT DIFFERENT AGES.

As the question, What is the average death-rate of the English population at different periods of life? occurs very frequently, and is not at all times easily to be answered for lack of the official documents in which such statistics are periodically published, we subjoin the latest authentic information upon the subject, derived from the Thirtieth Annual Report of the Registrar-General, just presented to Parliament. For the benefit of any of our readers who may not be much accustomed to the study of statistics, it may be said that the two columns here given represent the average annual deaths occurring in the thirty years 1838—67 to persons of either sex at the stated periods of every thousand persons of corresponding ages estimated as representing the average yearly population during the thirty years.

The Supplement to the Registrar-General's Twenty-fifth Annual Report contains, perhaps, the most valuable information on record as to the mortality of children in different parts of the country.

SHUT YOUR MOUTH.

We have received a copy of the third edition of the amusing pamphlet under the above title, in which Mr. Catlin argues that all the diseases incidental to civilization are due to breathing through the open mouth. We confess that we are at least half converts to the views of the author, and we commend his book to the notice of our readers. Its illustrations are infinitely humorous, and disply great artistic talent. The gentleman asleep after dinner, and the ideal portrait of a horse with its mouth open, as well as the contrasted groups of Indians and of English bumpkins are admirable both in conception and execution. The author pushes his argument much too far, and excludes other morbific causes of very general operation. But we think there can be no doubt that the action of the nasal passages, whether in warming the air or in freeing it from impurities, must be of the highest importance. Mr. Catlin should certainly carry all the ladies with him, if they will but study the effect of the open mouth on their appearance, and will lay to heart the author's dictum, "that idiots asleep cannot be angels awake."

ON THE DILATATOR MUSCLE OF THE PUPIL.

Prof. Dogiel, of Moscow, gives, in the *Centralblatt* for May, the results of investigations he has undertaken to determine the question of the existence of a dilatator pupillæ muscle in mammals and birds. The point is one that, speaking histologically, is settled, on account of the number of radiating bloodvessels, the quantity of black pigment, and other elements which compose the iris. Dr. Dogiel adopted various modes of procedure—as treating the iris with acetic acid and carmine, with chroomic acid, and with chloride or palladium, and he also made a variety of sections. He has arrived at the conclusion that the dilatator pupillæ is present in the eyes of man and of all the mammals and birds which he has had an opportunity of examining. In can be demonstrated much more easily in birds than in mammals. In both it lies nearer the posterior than the anterior surface of the iris, and its fibres are arranged in a radiating direction. In some animals the inner extremities of the radiating fibres form arcades, and become continuous with the concentric fibres of the sphincter; the latter may thus be regarded as a point of attachment for the former. In birds the fibres extend from the pupillary to the ciliary border; but in mammals the muscle occupies only the external third, or less, of the surface of the iris. In birds it consists of striated, in mammals of smoth, muscular fibre.

ON THE LOCAL TREATMENT OF CROUP.

Dr. Weber, of Darmstadt, has recently been employing lactic acid in croup, to the use of which he was led by noticing its remarkable power of dissolving fibrimous exudations. In the croupal membranes which collected in the canula after the performance of tracheotomy. The beneficial effects were so great that he proceeded to apply it locally before attempting to operate, and although he receives many cases of this disease into his wards he has never had and occasion since commencing its use to open the trachea. The mode of pplication of the lactic acid is by means of the inhalation (spray?) apparatus, from ten to twenty drops in half an ounce of water being inhaled, at first every half hour, and then in proportion as the breathing is relieved, the quantity being reduced from ten to five drops in the same quantity of water. He never found it requisite to continue the remedy for more than twelve hours. Usually after the application had been repeateb for a few times, he discontinued it, and replaced it by strong camomile tea. The eyes and other parts of the face must be carefully protected from the steam, or its cauterizing effect becomes immeediately apparent.

Foreign Gleanings.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

REPORT OF THE COMMITTEE OF THE ACADEMY OF MEDICINE ON THE MORTALITY OF NEW-BORN CHILDREN.

About a year ago, the question of the mortality of new-born children, started by Brochard's exposition of the frightful death-rate of the infant population of France, was warmly agitated at the Academy of Medicine, and in the political and medical press of this country. One of the consequences of this agitation was the appointment of a committee at the Academy of Medicine, to ventilate the whole subject, and point out the means of obviating such a large destruction of life. At the last meeting of the Academy, the Committee presented its report, through M. Blot, one of its members. It would have been well if the committee had taken up the whole question *de novo*, and thoroughly sifted it to the bottom. It is one of vital interest, involving most important sanitary and social problems; and though some of its points were brought to light in the recent debates to which I have alluded, there remained many others which required to be carefully studied and elucidated. The Committee seems to have taken it for granted that the whole question had been sufficiently discussed, and has somewhat neglected the medical and social aspects of the subject in confining itself to the indication of certain administrative measures which it recommends to the attention of the Government. These measures are restricted to the regulation and surveillance of the wet-nursing system, which has assumed such dimensions in France, owing to the peculiar aversion of the higher classes to nurse their children themselves; to the ambition of the merchant and shopkeeping class, who in their race after wealth can scarcely spare time for bringing up their children; to the stern necessities of life among the working classes; to the vast number of unmarried mothers, &c. This baby-farming was, therefore, one of the most important points of the question, and demanded immediate control and regulation. The awful mortality caused by the neglect and cruelty of those who earn a livelihood by baby-farming had been placed beyond doubt by all recent statistics and documents, and has just been exhibited in a fearful light by a trial at Montauban, wherein it was shown that a female, who earned her living by taking charge of babies, had slaughtered and stowed away half-a-dozen of them in a very short space of time, defore being detecccted by the police authorities. The question, however, involved many others of interest, and this neglect of its social and medical aspects by the Committee of the Academy is more to be regretted, as the Government has just appointed a sort of lay committee, including only two medical men, to investigate the question, which, judging from the manner in which the committee has been composed, will be studied only in its administrative aspects, and in view of the administrative measures which may be adopted.

ON THE EFFECTS OF ABSINTHE.

In connexion with an important memoir recently communicated to the Paris Academy of Sciences by M. Magan, and in which the author shows, as the results of his comparative researches, that alcohol alone does not produce epileptiform attacks, whereas absinthe combined with alcohol does produce them, M. Decaisine has written to the Academy to support this statement by refering to his own well-known researches on the evil consequences of absinthe drinking. After a series of clinical observations, M. Decaisne had concluded that these effects were owing to the peculiar nature of the liquid. This view, however, has been strongly combated by various observers, especially by M. Deschamps (d'Avallon), who contends that the various inconvéniences of absinthe drinking are due simply to the degree of alcoholic concentration of absinthe. M. Decaisne, therefore, rejoices that his clinical observations have been confirmed by M. Magnan's experimental researches, which clearly shows the difference between strong alcohol and absinthe.

A CASE OF PREGNANCY BY INCLUSION.

The notes of this case were read on Tuesday last by M. Depaul (Proffessor of Obstetrics at the Hôpital de la Clinique) to the Academy of Medicine. The subject of the observation was a child two days old, bearing on the posterior région of the sacrum a somewhat voluminous tumor of an oval form, pedunculated, pulsatile in certain situations, covered with skin and hair, and with a small growth resembling an ear. The tumor was excised, and the pedicle clasped in a ligature; the child is now quite well. Within the tumor were found some muscular tissue, two arteries a rudimentary intestine, and four little bones. It therefore contained the elementery *débris* of an embryo. Added to the fact that it was covered with hair, it was discovered that there existed a small hole, with a canal of five centimetres in length, looking very much like an anus. M. Depaul, therefore, thinks that this was undoubtedly a case of pregnancy by inclusion. He had already had occasion to observe three tumors, having a similar aspect, in the same region. Two of them exhibited the character of myelocyte tumors; the third was embryo-plastic. He concludes that in the sacral region there may be developed five varieties of tumors: myelocyte, embryo-plastic tumors, tumors owing to hydrorachis, hypertrophy of Luschka's gland; and lastly, tumors like those in question, and owing to pregnancy by inclusion.

THE ETIOLOGY AND NATURE OF PYOHÆMIA.

This much-vexed question is now being discussed at the Academy of Medicine. It was set upon the *tapis* by M. Alphonse Guèrin, surgeon to the Hôspital Beaujon, who communicated the notes of a case of pyohæmia, in which the employment of sulphate of quinine had brought about a cure. It is now twenty years since M. Alphonse Guérin declared himself a staunch advocate of the zymotic theory of purulent infection, and he still upholds the same view. He has been struck by the strict analogy between the symptoms of malarial fever and those of pyohæmia, and this has led him to the free employment of sulphate of quinine as a specific therapeutical agent, which he considers as being the only safe remedy wherever success may be expected. In the discussion which followed the communication of this case, the curability of pyohæmia was admitted by the Academicians. Several cases of cure have already been recorded; and that of M. Alphonse Guérin, in which the real presence of pyohæmic symptoms does not seem to admit of a doubt, is to be added to those of Bonnet, Follin, Sédillot, Vidal, Gosselin, Broca, Verneuil, &c., to mention only the French observers. The general sentiment of the Academy seemed to incline, however, towards the opinion that in such cases the favorable termination took place spontaneously, and not through the employment of sulphate of quinine, or any other therapeutical agent.

At the last meeting of the Academy, the discussion took a loftier flight, and entered on the domain of speculation and theory. The septic and zymotic theories of pyohæmia have met with two ardent advocates in the persons of MM. Verneuil and Guérin. The latter, to support the facts of the case which he related, developed to its fullest extent the zymotic theory of pyohæmia, which he considered as an infectious and specific disease, often contagious, epidemic, endemic, and sporadic, and due to the absorption of a peculiar miasm, which he compares to the vegetable miasm of malarial fever. He insists on the etyological conditions of the disease—namely, the agglomeration of the wounded, &c.; the analogy between the development of purulent infection, and of telluric infection, typhus, and other zymotic diseases; the absence of any degree of concordance between the local phenomena of the wound, and the rapidity or intensity of the symptoms of infection, &c. On the other hand, M. Verneuil warmly defends the views which have been propounded by the German school, and notably by Billroth—namely, the septic theory of pyohæmia. According to those observers, pyohæmia is only one form of a peculiar condition which attends traumatic destruction, is characterised by traumatic intoxication, and is due to the absorption of septic matter developed in wounds and suppurating surfaces. Purulent infection is therefore only the termination of traumatic intoxication; and in order to understand its nature it is necessary to investigate synthetically all the febrile phenomena observed in the wounded. As is well known, Billroth ranges the different phenomena which attend traumatic fever, secondary inflammatory fever, septicæmia, and pyohæmia. The two theories are, therefore, quite distinct.

It is not my object to insist, however, on the different points which distinguish them, nor on the objections which each has encountered, my readers being fully *au courant* of the question. I wish merely to relate what ideas are now entertained in this country touching this most important question of pathology, and thus show what progress it has made here. Until now nothing new—I mean as carrying conviction to the mind—has been advanced at the Academy by the two orators I have named; M. Alphonse Guérin having set forth *de novo* the views which he propounded about twenty years ago in a thesis, and M. Verneuil having only, in a brilliant extempore discourse, related the theories which have recently been advocated in Germany and in England. The question will, however, again be discussed at the forthcoming sittings of the Academy; and if no collection of facts or experiments, definitely settling the question, be brought to light, at least some good may be expected from the proper discussion of existing theories.

This was M. Verneuil's *début* at the Academy; and his friends and admirers, who know his varied abilities as an elegant and fluent orator, were not dissapointed in the expectations which they had formed of his maiden speech.

DR. BROWN-SEQUARD.S LECTURES AT THE SCHOOL OF MEDICINE.

Whilst awaiting the inauguration of his official course of lectures on Experimental and Comparative Medicine, which will take place during the next winter session, Dr. Brown-Sequard has commenced a series of lectures, illustrative of his more recent experiments, inone of the laboratories of the School of Medicine. The first subject which he has chosen is that of Convulsions. Before entering fully into the question, made a few introductory remarks, in which he insisted on the peculiar character and value of the teaching with which he has been entrusted. The chair of Comparative Medicine, he said, was not instituted, as might be thought, with the object of establishing a parallel between human medicine and the veterinary art. Its object was to incite by means of experimentation upon animals morbid results analogous to those which are observed in man, and thus to draw, if possible, conclusions which might be applied to the latter. His aim was therefore eminently practical. For instance, man was subject to convulsions of various forms and nature, and arising from various causes; the detection of their origin and mechanism was surrounded by great difficulties; but if we could produce analogous phenomena in animals we should be possessed of a powerful means of investigation, and thus experimental medicine would attain a high and most useful, object.

The lecturer then commenced the study of convulsions by that of epilepsy. He put to himself the question, whether epilepsy had a central seat? and formulated his answer thus: that, anyway, the point of the nervous centres whence arises the first convulsive phenomenon may be considered the central seat of epilepsy.

Esquirol had stated that in nine cases out of ten post-mortem examinations of epileptic subjects had shown lesions of the spinal cord. On the other hand, he (Dr. Brown-Sequard) had recorded upwards of 100 cases wherein injury of the spinal cord had frequently given rise to epileptiform convulsions, either spontaneous or incited. Epilepsy might, however, occur amid other circumstances; for instance, in cases of alteration of the recent experiments on guinea-pigs, of which I have nervous branches.

Dr. Brown-Sequard here passed in review already given you a full account, and in which it is observed that section of either half of the spinal cord, cr section of the whole cord, o division of the sciatic nerve, brings on well-characterised epileptiform seizures. Several of the animals were exhibited. It was seen that the attack of epilepsy invariably occurred on the side which had been injured. When the section of the spinal cord is complete, or when both sciatic nerves are severed, the epileptiform attack manifests itself on both sides. This was well exhibited in an old guinea-pig, in which complete section of the cord had been performed seven months since. The hind legs are both paralysed, and when the epileptic fit is incited, both the front limbs are seized with convulsive movements. The epileptiform attacks in all the above cases can only be produced by exciting the *zone epileptogène*, as I have stated in my former letters. This *zone epileptogène* is observed on both sides. of the face, when both halves of the cord or both sciatic nerves are serverd.

The lecturer stated that injury of other nerves, than the sciatic might become a cause of epilepsy, in a lesser degree, however. He mentioned the internal popliteal. Section of the outer popliteal had never yet brought on epileptiform seizures. The differences which had been observed in nerves with respect to this faculty of producing epilepsy depend on both the quantity of fibres and the degree of excitability.

Referring to the application of these results to man, Dr. Brown-Sequard observed that, at first sight, they might appear contradictory. Thus, forty-five cases were already known in which lesions of the nerves of the lower limbs in man having brought on epileptiform attacks, section of the nerves had produced a cure, and caused the disappearance of the convulsions. This was quite contrary to what occurred in animals, as amongst these, section of the nerves brought on epilepsy. The contradiction was, however, merely apparent, and simply proved thrt in man the nerves of the limbs were less excitable than in guinea-pigs. In the former an irritating cause of strength was necessary to bring on epilepsy, and that cause was often made to disappear by dividing the nerve; whilst in the latter mere section of the nerve produced an irritation which was enough to give rise to convulsions.

CREASOTE IN TYPHOID FEVER.

It seems now settled that carbolic acid, and in general, the results of the destructive distillation of wood or tar, shall be tried in all complaints. We are now doing, to a certain extent, what Raspail loudly advocated. He was a learned chemist, but did not belong to the profession, and conceived that animalcules were the cause of all maladies; hence he proposed a universal panacea in the shape of *camphor*. The working classes in France still swear by Raspail. Now we find Dr. Pècholier, of Montpelier, using creasote in typhoid fever. More than sixty patients were thus treated with apparent success, and the author considers that with creasote the contagious influence is lessened.

CONVERGING STRABISMUS: POST-MORTEM EXAMINATION.

Prof. Magni had an opportunity of examining the head of a man of sixty who had suffered from this kind of squinting. The paralysis of the external recti was owing to compression of the sixth nerve, on both sides, within the cavernous sinus, by the carotid artery, which was abnormally twisted upon itself. The globes of the eyes were, however, quite healthy.—*Schmidt's Jahrb.*, No. 6, 1868.

VIRULENT CORPUSCLES.

M. Chauveau, the indefatigable veterinary pathologist, has just placed before the Academy of Sciences of Paris a paper wherein he gives full details of the manipulations by which he succeeds in separating virulent corpuscles from the serum, or menstruum, in which they float. He succeeded in isolating such corpuscles from the pus of a pulmonary abscess affecting a horse suffering from glanders. The author transferred the corpuscles to distilled water, inoculated the latter to two animals, and they soon perished with glanders. It would be worth trying whether carbolic acid would not destroy the activity of the corpuscles.

A SOLID INJECTION IN GONORRHŒA.

M. Paillasson mentions in the "Montpelier Medical" (May, 1869) his method of curing gonorrhœa. The object of therapeutists has always been to keep the walls of the urethra asunder: Ricord attempted it with tents, Jacquemet and Mallez by introducing powders into the urethra. The author has proposed a syringe made of soft tin, so that it may be rolled upon itself by means of a short key, upon which it is made to wind. The substance used is a combination of starch and glycerine, which may be used alone or mixed with astringent substances. The author states that this method has been tried in sixty cases with much success.

TREATMENT OF TINEA TONSURANS.

Dr. Pietro Grilli has found Helmerich's ointment very efficacious in this affection. He states that he copied the practice fron Prof. Bini, who discovered the efficacy of this sulphuro-alkaline ointment in destroying the tricophiton tonsurans, by using it in females who were suffering from the latter disease and itch.

ON CERTAIN PHYSICAL AND PHYSIOLOGICAL PROPERTIES OF MUSCLES.

M. Chmoulevitch has just published on the above question an interesting paper, which may be summed up thus: 1. When heat acts on a muscle at rest, it produces two effects—one purely physical, the other physiological. The physical effect is observed only between 2 and 28 degrees centigrade. Between these limits, the muscle acts, under the influence of heat, in a manner opposed to all other known bodies: it shortens in becoming warm, and lengthens in cooling. 2. Beyond 28 degrees centigrade, the purely physical influence which has just been described is complicated by a novel action of a physiological nature. If the temperature of the muscle be raised in a regular manner up to 40 or 41 degrees, a shortening is produced, of which the rapidity increases between 35 and 41 degrees; the muscle is in a condition which has been termed *rigidity through heat.* 3. When it is required to produce this kind of rigidity in two muscles, one of which has been separated from the body three or four hours before the other, a higher degree of temperature must be employed for the first muscle. 4. The size of the muscle diminishes during cadaveric rigidity. 5. The specific weight of the muscle increases under the same influence. 6. At the same time, the absolute weight of the muscle diminishes. 7. The size of the muscle diminishes in like manner during *rigidity through heat.* 8. The mechanical tension of the muscles also produces a diminution of their size. This result, according to the mechanical theory of heat, is in accordance with another fact, which is—9. That in muscles (and especially living muscles) a certain quantity of heat is set free under the influence of mechanical tension.

INCREASING NUMBER OF LUNATICS IN FRANCE.

According to M. Lunier, Inspector-General of the Lunatic Asylums of France, the number of lunatics in this country from 1835 to 1869 has increased in the proportion of from 4·96 to 24·28 per 1000 inhabitants. This extraordinary increase of lunacy would be due, in some measure, to the imperfection of the former census; yet, it seems certain by the last census, brought down to January, 1869, that there exists one lunatic in every 412 inhabitants; and, on account of the fact that many families take every precaution to conceal the madness of one of their members, M. Lunier thinks that he may safely put down the rate at 1 in 200. In the lunatic asylums the total number of the insane has become four times more considerable since 1835, and has increased from 10,000 to 38,000. M. Lunier purposes to publish shortly a series of papers, in which he will examine the probable causes of this terrific increase, and the means of arresting its further development.

SENATOR CLAUDE BERNARD.

The Emperor has just paid a crowning tribute to the scientific glory of Claude Bernard by calling him to the Senate. There the great French physiologist will take his seat beside Nélaton the surgeon, and Dumas the chemist, both former Professors at the Faculty. The Senate will thus include three medical men, without mentioning Dr. Conneau. Only a short time ago Claude Bernard had the exceptional honor of being elected at the French Academy, a society which is composed of only forty members, consisting of the most distinguished literary characters of the day, and which is invested with a peculiar prestige in the eyes of the French. Claude Bernard has, therefore, passed through more than the ordinary number of grades and positions for which a scientific man can have ambition in this country. Besides the two distinctions which I have just named, he is Professor of General Physiology at the Museum, Professor of Experimental Medicine at the Collége de France, Life-President of the Biological Society, Annual President of the Academy of Science, a Member of the Academy of Medicine, Commander of the Legion of Honor, &c.

M. SAINTE-CLAIRE DEVILLE'S EXPERIMENTS ON THE EFFECTS OF PRESSURE—A CURIOUS LABORATORY.

In connexion with his scheme for substituting the mineral oils for coal, as fuel, in the French fleet, M. Sainte Claire Deville has undertaken a series of experiments, in which he will study the effects of pressure on various phenomena, and especially the causes of light in flame, of combustion &c. In order to pursue these researches, it has been thought necessary to construct a large iron laboratory, capable of receiving the experimenter, with all his apparatus, and which may be subjected to an extraordinary atmospheric pressure by means of a vapor pump. This iron safe has been fabricated by the direction of the Minister of Marine, and by the Emperor's express command. It has the form of a vast cylinder, surmounted by two chimneys, one serving to produce the pressure, and the other to admit the operator and his apparatus. The experiments will be conducted by M. Ste. Claire Deville, and some other *savants,* and will involve a certain degree of danger.

VITAL STATISTICS OF BARON HUSSMAN'S.

It will be remembered that one of the most telling arguments put forth by M. Haussman's defenders, during the recent debates at the financial difficulties of the city of Paris, was, that the large sums of money employed in demolishing and rebuilding whole quarters of the town were fully justified by its improved sanitary condition. "If the death-rate had remained what it was in the eighteenth century," eloquently exclaimed an orator, "by applying it to the population of Paris in 1866, we would obtain the fearful result of 64,285 deaths for 1868; whereas in 1866 there was only one death out of 49 inhabitants, making a total amount of 42,000 deaths; therefore, we really do, every year, snatch away 19,285 inhabitants from the hands of death." This statement M. Bertillon, the well-known statistician, stoutly refuses to endorse, in an able article just published in one of the Parisian medical journals. He admires the facility and tranquil self-possession with which general administrators in France declare themselves competent in all matters, and especially on subjects belonging to medicine and hygene, and he refers to the fact that out of sixty-seven members of the International Committee of Geneva appointed by the Government, there is only one medical man among so many senators and generals. Still more recently another Commission had been appointed, with the object of inquiring into the mortality of new born children, and it contained only two medical men. In like manner, proceeds M. Bertillon, the orator in the French House had adduced statistics which rested on no scientific ground, and had extemporised a statement which should have required years of patient study and research. M. Bertillon has been carefully collecting documents on the same subject for a long time past, and would have taken time to digest his materials, or allow them to ripen; but since official impatience, he says, has gathered their green fruit, then green fruit will he too serve up. He hopes to be able to show that the mortality of Paris is not less now than it was formerly,—that it is greater than that of the immense city of London, and that there is need, not to rejoice, but to find out the causes of this heavy death-rate. This will form the subject of a series of forthcoming articles. The one to which we allude is but an introductory chapter, in which he sets forth his programme.

SULPHATE OF QUININE IN TROPICAL DIARRHŒA.

At a recent meeting of the Societe Medicale does Hopitaux, M. J. Simon communicated the notes of a very interesting case, in which the beneficial effects of sulphate of quinine were quite marvellous. The patient, a lady from the tropical regions, had been suffering for the previous twenty years from constant diarrhœa, and had come over to France for the purpose of having better medical attendance. She had once inhabited a marshy locality, and had had malarial fever; but this had completely disappeared, and at the the time M. Simon first saw her, there was nothing in her condition which called his particular attention to the idea of a connexion between malarial poison and the bowel complaint. Yet the spleen was much enlarged, and the liver voluminous. The patient was completely free from fever. There had never existed any symptoms of dysentery. Opiates, astringents, and tonics were tried, but with no beneficial effect. On February, the 6th, the patient was in a moribund condition. M. Simon thought of administering fifty centigrammes of quinine. The effect was instantaneous. Under the influence of this treatment the patient railled rapidly, the diarrhœa completely disappeared, and the spleen and liver returned to their normal dimensions. The patient has now completely recovered her health From time to time she may have slight diarrhœa, which assumes the character of indigestion, but disappears rapidly on the employment of quinine. The case is most important, as showing one of the peculiar forms of malarial poison, and the wonderful specific action of quinine.

REPRESENTATION OF THE PROFESSION IN THE FORTHCOMING FRENCH PARLIAMENT.

France has just traversed its electioneering period with unusual spirit and animation. Yesterday and the day before, the *bureaux de scrutin* were in full operation, and at the time I write the results of the election are being published throughout the whole land. Among the candidates of all shades of political opinion who have presented themselves for nomination, there exists a somewhat large number of medical men. M. Bouley, veterinary surgeon and member of the Institute and Paris Academy of Medicine, has been canvassing at Alfort, the seat of the Veterinary College, of which he is the director. Though well known to and fully appreciated by the rural population of the neighbourhood of Alfort through his duties as a veterinary surgeon, his efforts have proved quite unsuccessful before the popularity of Pelletan, the well-known Radical member. M. Berrier-Fontaine, physician to the Emperor, has also been soliciting the votes of the second circumscription of Paris, in opposition to M. Theirs; but his candidature has been still less successful. In the provinces, however, it is fully expected that a fair number of medical candidates will be returned. It is curious to observe that their election is strictly political, and has nothing to do with the desire of seeing the medical interest well represented in Parliament. The public is not at all alive to the importance of having the sanitary questions of the day discussed by competent persons. It must be confessed that the profession in France is more singularly apathetic in all such matters. It does not even think of sending a few of its members to Parliament with the object of having medical interests and medical corporations well represented beside the countless lawyers, journalists, engineers, retired military men, and land proprietors, who compose the lower House; and therefore it makes no use whatever of its great and legitimate influence in this direction. Still less does the profession estimate the advantages which would accrue to the general public by the better elucidation of all the sanitary matters touching which the French Chambers are called upon to legislate. All such considerations are completely absent from the minds of medical practitioners in France, and the whole energies of the best men seem to be absorbed by the desire of making to themselves a scientific reputation or of acquiring an extensive practice. This state of things, applying specially to the present elections, is the more to be regretted, as the forthcoming Parliament will be called upon to consider the medical institutions of the country, a total reform of which is now being discussed.

PROFESSOR CLAUDE BERNARD AND THE FRENCH SENATE.

In my last chronicle but one I mentioned the apointment of the celebrated French physiologist to a seat in the Imperial Senate. It appears that the idea of the advisability of this appointment arose in connection with the warm discussion which took place some time ago in the Senate in relation to certain petitions demanding the right of free teaching throughout France, on the ground that the official teaching of the Faculties, especially that of Paris, was deeply tainted with materialistic doctrines. During the discussson, the names of several *savants*, and above all that of Claude Bernard, were frequently uttered by tho orators, who showed, as was natural, much inexperience of the different scientfic views which they wished to incriminate or to defend. It became evident that the defence of scienitific interests, as well as of the scientific tendencies of the day, had better be placed in competent hands; and the appointment of some French *savant* possessed of a high and undisputed authority on all scientific subjects, was decided upon. For holding such a seat, no better choice could have been made than that of Claude Bernard. His high reputation and special character as a *savant* better fit him for the duties of representing the cause and interest of general science in the Senate than Nélaton, who is more strictly a surgeon; than Dumas, whose labors, though of the highest value, have been exclusively devoted to chemistry; and than Conneau, whose experience is confined to the practice of medicine. Claude Bernard's position in the Senate may therefore be compared with that of Frerichs or Rokitansky in the House of Lords of Vienna.

It is undeniable that Claude Bernard's novel position, in the various connections which it will establish between himself and the authorities, will put him in the way of rendering good service to the progress of science in this country. This ambition he has already exbressed to the Emperor, by whom he was received a few days ago; and, amongst other details of this interview, it appears that the Emperor listened with extreme interest to Claude Bernard's relation of all the great things which are being done in Germany for the progress of science, and was not a little struck by the statement that a sum of *three millions* had been accorded by the Prussian Government to the laboratories of Bonn and Berlin.

CONTEMPLATED REFORMS AT THE PARIS SCHOOL OF MEDICINE.

The recent agitation of the students will probably have the beneficial effect of being followed by the introduction of changes in the present curriculum of the Faculty. It is not through the pressure exerted upon them by the students that the professors have taken up an inquiry into the innovations which may be adopted. The Faculty has been considering various plans for reforming the present curriculum during several years past. But the agitation of the students, though much to be blamed on account of its disorderly character, has at least given fresh momentum to the general desire for altering the present plan of studies. The adoption of a new curriculum, however, whether the reform be very extensive or very limted, cannot take place immediately, as it requires the ordinary run of legislative procedure to modify the existing order of things, in however slight a degree.

The innovations suggested to the Government by the Faculty will certainly include the abolition of one of the three examinations on Chemistry, Natural Philosophy, and Natural History. I am glad to find, in an article published in *La Gazette Hebdomadaire*, that the plan which will doubtless be adopted in regard to this special examination on the accessory science is very similar ta the one I suggested in my last letter—namely, a severe examination on the science at the outset of the student's curriculum; thus laying a sure scientific foundation for his studies, and thus leaving him undisturbed in his subsequent learning of anatomy, physiology, pathology, clinical medicine, &c., and then an interrogation on the medical applications of the sciences when the student goes up, four or five years later, for his examination in physiology, material medica, therapeutics, forensic medicine, &c.

The only difference between the plan mentioned by Dr. Dechambre as being destined to be adopted and the one which I have suggested is the following, which I consider, however, to be very important: the examination in chemistry, natural philosophy., &c, which would take place at the outset of the curriculum, is styled "medical chemistry, medical natural philosophy," &c. I confess I do not see how a student can well understand the medical connexion of chemistry, &c., without knowing something of the several branches of medicine proper (physiology, materia medica, therapeutics, &c.); and I think he had better be interrogated at the outset on *pure* chemistry, *pure* natural philosophy, &c., and only at a later period on the medical application of these sciences, with which he will have become acquainted whilst studying physiology, pathology, therapeutics, medical jurisprudence, &c.

Though the third of the five examinations for the Doctorate would be abolished, according to the scheme in contemplation at the Faculty, the whole of the five examinations would yet be maintained, only their character and orders would be altered. The first and second would remain as they are; the third would take in hygiene, legal medicine, therapeutics, and pharmacology; the fourth would consist in a clinical examination on medicine, including therapeutics and the art of prescribing; whilst the fifth would be also conducted at the patient's bedside, and would be devoted to clinical surgery, surgical operations, and accouchements. The advantages of such a plan would be great. Instead of only one examination at the patient's bedside (only one practical examination on the whole series), and instead of but one examination on therapeutics (as I mentioned in my last latter), there would be two. The practical education of the student would gain immensely thereby, and this multiplication of the tests which the students would have to undergo would enhance considerably the value of the diploma of the Paris Faculty.

PROPHYLAXIS OF CHOLERA.

This subject was again taken up at a late meeting of the Academy of Medicine. MM. Barth and Briquet expressed a fear that the opening of the Isthmus of Suez would conduce to the propagation and development of cholera in Europe. Would not the choleraic pilgrims, coming from Mecca, thus meet with greater facilities for forming, in their debarkation at Suez or Alexandria, seats of infection and propagation, whence cholera would irradiate in Europe? Or would not ships coming from the Mauritius, where cholera often reigns epidemically, transfer the seeds of the disease to Egypt? M. Fauvel answered both these questions. The pilgrims coming from Mecca would not be allowed by the Egyptian Government to pass by Suez. This would also apply to ships coming from the Mauritius. M. Fauvel insisted on the preventive measures which should be taken by the Egyptian Government against the choleraic pilgrims coming from Mecca. It is to that point that the whole efforts of European Governments should be directed, for the communications between Egypt and the European countries were so constant and multiplied that, if Egypt were once infected, the other countries could scarcely be preserved.

FRACTURE OF THE LOWER PORTION OF THE LEG.

Some interesting data touching the above injury have been brought forth in a discussion which is now going on at the Imperial Society of Surgery. M. Verneuil has presented a thesis, written by one of his pupils, in which it is stated that nineteen cases of complicated fracture of the ower third of the leg were treated by occlusion by means of collodion, and that in seventeen of the cases recovery was most speedy and complete. It appears, besides, that in the two cases in which death ensued the fatal termination was due to other causes than the fracture. These results are indeed most satisfactory, and would constitute a great gain to conservative surgery, unless this is merely a "lucky series" of cases. One of the members observed that, though he had no positive data whereupon to base his conclusion, he thought that in cases of fracture of the leg communicating with the joint and with the outer space, immediate amputation should be the law. The majority of the assembly, however, demurred to this view, and expressed themselves in favor of expectant and conservative procedures. It is obvious that there are many circumstances which should be taken into account whilst considering the course to be adopted in each case: the general condition of the patient, the existence of a certain diathesis, the cause, extent, and nature of the lesions, &c., must be carefully weighed, and must all exert their influence as a guide to the surgeon.

LIGATURE OF THE SUBCLAVIAN ARTERY.

A few days ago, M. Panas, of the Hôpital St. Louis, applied a ligature to the subclavian artery, at the outer side of the scaleni muscles, in a female patient aged fifty-four. On the 4th of May the patient had had her shoulder dislocated, when reduction was effected without difficulty. On the 10th following she was sent to the convalescent institution of Vésinet, and at that time nothing peculiar was to be observed in her condition. During her sojourn at the asylum, however, diffusé aneurism formed in the situation stated. When she returned to St. Louis on June 10th, there existed a considerable effusion of blood, descending laterally to the base of the thorax, and having determined in the situation of the armpit and left arm a voluminous tumor. The tumour distended the skin considerably; gangrene ensued, and brought on hæmorrhage, and this necessitated the application of a ligature to the left subclavian. In my next letter I shall send some futher notes on this interesting case.

THE HARMLESSNESS AND ADVANTAGES OF THORACOCENTESIS.

In the able report which M. Besnier has just read to the Medical Society of the Hospitals, on the medical constitution of Paris during the months of March and April, there is a very interesting remark touching the harmlessness and benefit of thoracocentesis. During the period referred to, twenty-five cases of severe pleurisy had occurred in the various hospitals. The operation was performed in fourteen cases with complete success; and it was observed that the patients who were punctured recovered much more speedily than those in whom the slightness of the effusion did not seem to necessitate any surgical intervention. In four of the cases wherein the operation was performed, the effusion was not abundant, and the effects proved quite as satisfactory. These results speak highly in favor of thoracocentesis; and the time may come when the operation will be performed in cases of slight pleuritic effusion, to the utter neglect of blisters, purgatives, diuretice, and depletive measures, which often weaken the patient, and cause him great sufferring.

News Items, Medical Facts, &c.

Memorial To the LaTe Dr. De Beauvoir de Lisle.—A stained glass window to the memory of this lamented gentleman, subscribed for without solicitation, and, indeed, it may be said spontaneously, by the friends and grateful patients of the deceased gentleman, is now being placed in the town church, Guernsey—forming an additional embellishment to the fine old structure. The design—a most apdropriate exemplification of him in whose honor the window is erected—is intended to illustrate Our Lord's parable of the "Good Samaritan." In the three main lights the parable is thus represented:—1st. The Good Samaritan pouring oil into the wounds of the man who fell among thieves. 2d. The Good Samaritan bearing the wounded, man on his beast to the inn. 3rd. The Good Samaritan on his departure commending the poor man to the care of the innkeeper. In the tracing, Our Lord and the angelic host are represented. The text is; "Vai toi aussi, et fais de meme.' And the inscription at the base runs as follows:—"A la glorie de Dieu, et en mémoire de De Beauvoir de Lisle, Docteur en Médecine, né le 29e Mai, 1836; décédé le 27e Septembre, 1868.—Ses amis et compatriotes ont fait faire ces vitraux."—*Guernsey Star.*

New Enactment touching Medicine in Prussia.—The North German Parliament has paid due regard to the complaints of the profession: the obnoxious clause in the law relating to the practice of medicine is withdrawn. The clause runs thus:—"Medical men are obliged, under a penalty, to attend anyone who may request their assistance," The tyrannical tendency of such a law raised the ire of the whole medical body, who felt that, with the well-known self-denial, and readiness to fly to the rescue of suffering humanity, of which so many proofs have been given by medical men, the clause was an insult to the profession.

The Original Stethescope versus the Solid Stethescope.—A controversy is just now going on between Dr. Niemeyer, of Magdeburg, and Dr. Sommerbrodt, of Breslau, on the above subject. It will be remembered that the former considered the solid instrument far preferable to the perforated, the reverse being the opinion of the latter. We have in this country experienced stethescopists; it would be worth while to discuss the question. From a few trials instituted by ourselves, we are inclined to favor Laennec's origilnal nstrument.

Accident to Professor Bunsen, of Heidelberg.—This eminent chemical philosopher has lately been severely wounded in the face and hande by a laboratory explosion. It will be remembered that Professor Bunsen almost lost an eye some time ago by a similar explosion, bu toompletely recovered. It is to be hoped that the present accident will have as favorable an issue as the former.

PUBLISHED BY
WM. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

J. HENRY BENNET, M.D., T. WAKLEY, Jr., M.R.C.S.E. EDITORS.

PUBLISHED MONTHLY.

No. 10. NEW YORK, OCTOBER, 1869.

Clinical Lectures
ON
DISEASES OF THE CHEST.

Delivered at Charing-Cross Hospital.

By Hyde Salter, M.D., F.R.S.,

Fellow of the Royal College of Physicians, Physician to Charing Cross Hospital, and Lecturer on the Principles and Practice of Medicine at its Medical School.

LECTURE I.

ON PRIMARY CANCER OF THE LUNG.

Gentlemen,—There are two classes of cases that have a special claim on your attention—the very common, and the very rare; the common because they are common, the rare because they are *rare*; the common, because they will form the great bulk of the material on which your future professional services will be exercised, on your knowledge of which therefore your credit, and usefulness, and fortune will depend; the rare, because your opportunities of gaining knowledge of them are so few that unless you seize those fleeting opportunities as they pass, and utilize them to the utmost, you will run a chance of not getting any knowledge of them at all—that is, not any knowledge that is worth anything, not any personal and practical knowledge. A book knowledge of course you may get, for a man may read as easily of the rarest disease as of the commonest; but that is a knowledge which will not serve you at a pinch, and will help you nothing when the real thing comes before you, and you have to recognize and treat it for yourselves.

The case to which I wish to call your attention to-day is one of the latter class—one of the rarer forms of disease, and you may probably pass the rest of your student's life without seeing another example of it; but, beyond the interest that it thus possesses, there are many points about it, as those of you who have watched it know, that are highly interesting and instructive, especially in relation to diagnosis and certain striking physical signs. Without further exordium I will read you the history of the case.

Wm. R——, aged forty-three, by occupation a cotton-porter at Liverpool, married, of sober and temperate habits, and never having had any illness but typhus fever, five years ago, was admitted into Charing-cross Hospital, on Oct. 20th.

Last May, nearly six months ago, he noticed that his neck was swollen, and that he could not button the neckband of his shirt. He observed too that his face was swollen, and his eyelids puffed. This gradually increased, and about two months later, he noticed his breath beginning to get short, which troubled him, especially on lying down at night. About the same time the swelling in the neck began to develop itself, especially on each side, in the situation of the posterior triangles, filling up the angle between the neck and shoulders, and producing an appearance as if the glands in that situation were enormously enlarged. Very soon after this another symptom was added—enlargement of the superficial veins of the front of the chest, and subsequently those of the abdomen. To this, after a time, hoarseness was added—a cracked, harsh rough voice, and a raucous, hissing cough. About six weeks after this he spat a little blood on two consecutive days, amounting altogether to about a wineglassful. Subsequently, both arms swelled as well as the face and neck, and the veins of the right arm enlarged also. He had been coughing and spitting a little mucus from the time that he spat the blood; but about a fortnight ago he suddenly began to spit a very peculiar material, evidently puriform, in distinct isolated pellets, which I will more particularly describe presently, and which he is spitting, though in diminished quantity, at the present time. This matter was expectorated in its maximum quantity, when it suddenly made its first appearance. The man says that at that time it looked like "yellow corruption, such as comes from a gathering;" but then, as now, from the first, it was in isolated pellets, about the size of the end of a child's little finger, remaining quite distinct from one another in the saliva with which they were mixed. The night after he came into the hospital these pellets began to be stained with blood, but on many nights since there has been no blood-stain. He spits much more by night than by day, and any blood-staining of the pellets is sure to be by night. The quantity spat in the twenty-four hours when he first came in was half a pint; it has gradually decreased since that time, and now he spits hardly an ounce of a night. By day he spits hardly anything, the expectoration usually beginning on lying down at night. At first it tasted decidedly "sour;" now much less so. It comes up very easily, and with but little cough. The small pellets all sink to the bottom of the fluid they are expectorated with, and none contain air.

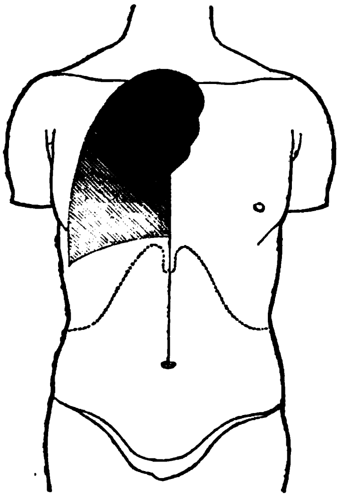
When the swelling of the face commenced many of his friends remarked to him that he was getting stout, but they none of them remarked that he was looking ill; so that this time, presumably, his health was not affected. Moreover, he himself was not conscious of his health failing in any way. But from that time he rapidly lost strength, and his legs became thin; the same change in the upper extremities and upper part of the body probably not being noticed on account of the swelling. The swelling of his face, neck, and breast reached its maximum in about two months; then it remained two months stationary, and now for two months it has gradually been getting less, for the last fortnight considerably so. The face is generally more swollen in the morning, on getting up. The swelling in the right arm has coincided with that of the breast, neck, and face; the left not. It was not swelled more than a week; it came suddenly and went suddenly. The enlargement of the veins of the neck, arms, and anterior surface of chest and abdomen appeared at the same time as the swelling, and, like the swelling, they are considerably less than they were, especially those of the arms; the anastomosing veins, however, of the interior surface of the trunk seem as large as ever, especially the epigastric.

Present condition.—The patient's appearance is very remarkable. His face looks like that of a man with well-developed renal dropsy—the eyes prominent, the eyelids baggy, the whole face puffed and bloated. On stripping him, a still more remarkable appearance is discovered; the neck is so swollen and blown out as to have entirely lost its natural shape. This would not be observed so much in profile as in front, the swelling being chiefly lateral; the angle formed by the outline of the neck with that of the shoulders is filled up, giving a curious conical look to the neck. The material forming this swelling is soft and loose, and seems to be the infiltrated areolar tissue of the part. The whole throat, however, is swollen; so are the arms. There is nowhere any true pitting—the œdema appears "tough." But the most striking appearance of all is derived from enlargement of the superficial veins of the neck, arms, chest, and abdomen; they are prominent, varicose, and in some parts tortuous to a remarkable degree. The external jugulars, the smaller veins at the root of the neck, the superficial veins of the front of the chest, especially the external mammary, the acromio-thoracic, the long thoracic, and even the subscapular, the cephalic, and veins of the forearm, are all equally affected. Over the surface of the left pectoralis major is a complete network of knotty and anastomosing veins, forming quite a plexus; they extend round the anterior fold of the axilla and over the shoulder. But the most conspicuous veins of all are those passing upwards from the pelvic veins and anastomosing with those above—the superficial epigastric, and superficial circumflex iliac; these, like those on the breast, are much larger on the left side, and form considerable venous channels, remarkably tortuous, and freely anastomosing with the veins meeting them from above. On feeling the surface over the lateral swellings of the neck, there is a knotty kind of feeling, as if the swelling might depend, in some part, on a varicose condition of the deeper veins in that situation. On shutting the eyes, the course of the enlarged veins can very well be traced by the finger, as full elastic cords. There is no swelling in the lower part of the body, and the legs are shrunk.

The man's voice is cracked, harsh, and hoarse, and he has a cough of similar character. There is a slight character of laryngeal constriction about his breathing—a certain whispering quality; but whether it is a mere trick I do not know. Respiration 20, pulse 104, at rest, in the sitting posture.

The sputum is unlike any that I have ever seen; one thing I regard as quite certain—that it does not come from the bronchial surface, for it is perfectly free from air, and sinks heavily to the bottom of the spittoon. It consists of pellets all of much the same size and shape, about that of a haricot bean, looking like pieces of sodden veal, a little shreddy and descomposed on the surface. Most of them are a dirty white in color, but some pinkish from blood. They lie at the bottom of a clear ropy fluid, which is evidently saliva, of which he spits a great quantity, both with these pellets and without, and which is distinctly blood-stained, like water in which meat has been washed, the blood being evidently derived from some of the pellets. Perhaps it is this color of the saliva that suggests to the mind the meat-like look of the pellets.

Physical examination.—Complete dullness over the right front; hardly, perhaps, complete below. Lower axillary and lateral region fairly resonant, but not equal in resonance to the left side in the same situation. Suprascapular region dull; interscapular dullish; infrascapular natural. In vocal fremitus I can find no difference in the two sides. Breathing bronchial in all the upper right front, with market blowing tubular character; it begins to get less so about the third rib, and toward the base of the lung is little more than harsh, with, however, a slight suspicion of blowing character. Behind, the same thing above, but in passing down the interscapular region the breathing becomes natural but harsh, and below the inferior region of the scapula is quite natural, the expiration being almost silent. Absolutely no moist sound whatever on the right side, and no adventitious sound of any kind except the bronchial character of the breathing. Left side natural in every respect, except a zone of crepitation at the end of inspiration at the extreme base behind. I should mention that the supraclavicular percussion on the right side is dull, and that the dullness crosses the sternum to the left side as far down as the lower margin of the second rib, below which it crosses obliquely downwards to the right. The distribution of the percussion dullness is shown in this diagram which I have made; it indicates the extension of the solid material upwards and to the left side, and represents, by a diminution of the depth of shade, the diminished dulness at the base.



There is almost complete want of movement in the right front; but, as far as I can make out, there is neither retraction nor bulging of the chest-wall. There is, however, increased visibleness of the intercostal spaces on taking a deep inspiration, showing the refusal of the lung to follow the expansion of the chest-wall.

Such are the material for a diagnosis in this case. Out of such materials what diagnosis can we construct? In other words, what are the lessons of these various physical signs and symptoms?

The first lesson I would inpress upon you is the lesson of the *sputum*. Whenever the contents of the spittoon are something altogether exceptional and extraordinary, be sure you have something extraordinary and exceptional to deal with. The sputa of all common lung affections are characteristic, and I am not much overstating their distinctiveness when I say that in the majority of cases you might diagnose the disease by the sputum. The sputum of bronchitis is characteristic; the sputum of phthisis is characteristic; the sputum of pneumonia is characteristic; sputum of pulmonary abscess is characteristic; the sputum of gangrene of the lung is characteristic. Now here we have a sputum utterly unlike any of these characteristic and familiar types. I felt on looking at it that I had never seen anything like it before; and this was the first thing that convinced me that we had in this case to deal with some state altogether exceptional. I pointed this out to you, you may remember, and ventured at once to predict that we should find the case to be one lying out of the common path. Bear in mind, then, the great diagnostic value of the spittoon, and how positive are the indications of its contents.

The second lesson is the lesson of the enlarged superficial veins. And what do *they* teach us? They tell us that there is an impediment to the free access of blood to the heart, either by the great superior or great inferior venous channel. I say *either*, because whether it is the superior or the inferior cava that is obstructed the result is the same as to the enlargement of these superficial veins of the trunk. And how does the enlargement of these veins point to the fact that I indicate? Because it shows that the blood is getting back to the heart by a circuitous and unwonted route, and this is tantamount to showing that it cannot get back by the direct and accustomed one. It shows, in fact, the establishment of a collateral venous circulation; and this as clearly points to the obliteration (partial or complete) of the original channel, as the establishment of a collateral arterial circulation does in ligature of a main artery. Suppose the inferior vena cava is obstructed by the pressure of an enlarged liver, or an ovarian tumor—what happens? The blood from the lower extremeties, unable to reach the heart by its normal and direct course, finds its way round by the anastomosing epigastric and mammary veins to the superior cava, and so enters the right auricle from above instead of from below. Suppose the superior cava is obstructed by the pressure of an aneurism—what happens? The blood from the head and upper extremities, before it can reach the heart, is compelled to follow the same circuitous route, passing down the whole length of the trunk and up again, by mammary, epigastric, and iliac veins and inferior cava, and so entering the auricle from below instead of from above. In either case the same vessels become the means of carrying on the interrupted circulation, and become, in proportion to the degree of the obstruction of the deep vessels and the length of time that the obstruction has existed, large, conspicuous, and tortuous channels. The only difference is, that in the one case the blood is flowing in these veins from below upwards, and in the other from above downwards. If the inferior cava is obstructed, the blood is flowing *up* the superficial epigastric and mammary veins, and therefore in a direction against the natural current in the epigastric and with it in the mammary veins. If the superior cava is obstructed, the blood is flowing *down* the mammary and epigastric, and therefore in a direction contrary to the natural current in the mammary and with it in the epigastric.

Now, which is it in this case? The enlarged veins tell us it is one or the other; but they take us no further; they do not say which. But although the enlarged veins may not, there are other signs that tell us very plainly which cava is the seat of obstruction. The turgidity and swelling of the face and neck, the varicose condition of the veins of the arms, with the history of swelling in the upper extremities, showed that it was the superior cava that was the seat of the obstruction; because it showed an obstructed venous circulation in all the parts tributary to it—parts whose circulation would be quite unaffected by any impediment in the inferior cava. The same localisation of the obstruction was pointed to by the evidences of pressure upon the windpipe, as shown by the character of the voice the breathing and the cough.

The third lesson is the special bearing of the evidence of pressure on the diagnosis of the present case. And here we must consider the other physical signs. These were principally, you may remember, dullness on percussion, want of lung-expansion, loss of respiratory murmur, and bronchial breathing. Taking these bare physical conditions, we might conceivably assign them to almost any source of undue density of lung—collapse, tubercle, hepatisation. But directly we pass beyond them, and come upon the evidences of pressure, we find something that none of these common sources of lung-condensation will account for; the alternatives of the diagnosis have immediately become narrowed. Enlargement of the superficial veins of the chest is no part of the history of phthisis; enlargment of the superficial veins of the chest is no part of the history of pneumonia. And why? Because the anatomical results of these diseases exercise no notable pressure on surrounding or contiguous structures. Whatever the source of solidification in this case, it must be something capable of exercising pressure on surrounding parts; in other words, something attended with increased bulk as well as increased density. And bear in mind, too, that it must be something in which increased bulk is an early primary condition. Evidences of pressure were the very first symptoms that showed themselves: the swelling of the patient's face, and his inability to get the neckband of his shirt together, were the first things that arrested his attention, at a time when he believed himself to be in perfect health; and it was not till two months later that the next symptom—the dyspnœa—showed it self. And bear in mind, too, the capital fact, pointing in the same direction, of the extension of the dullness across the middle line to the left side.

What, then, was left us? In fact, very little. The diagnosis was all but certain; still we thought there was one alternative left: it might be either cancer of the upper part of the right lung, or some mediastinal tumour, possibly cancerous, involving the right pneumogastric nerve, and producing that spurious kind of hepatisation of the corresponding lung that pressure upon this nerve is known to give rise to. In such a supposed case, the various symptoms of pressure and the percussion-dulness of the upper sternum, extending across to the left, would be caused by the mediastinal tumour, while all the other physical signs would depend upon the secondary lung affection. Of these two hypotheses, I inclined to the former: in the first place, because the latter involves a complex condition—a condition partly primary, partly secondary — a condition also more fortuitous (as far as the implication of the nerve goes), and involving almost the idea of coincidence (now probabilities are always in favor of simple conditions and the exclusion;) of coincidences in the second place, because it would be unlikely that the outline of the mediastinal tumour would so exactly fit on to, and be continuous with, the outline of the lung dullness; and thirdly, because, as far as I have seen, lung solidification of this particular kind begins below and creeps up, and is accompanied by a fine crepitation closely resembling, if not identical with, that of true pneumonia; whereas, in this case there was no moist sound whatever, and the mischief was located above.

The all but certain diagnosis, then, was primary cancer of the upper part of the right lung.

I will now read you the rest of the case, including the post-mortem examination.

The patient went on without any material change for about two months after his admission; indeed, at one time we thought the fullness of the neck and the enlargement of the veins were both diminishing. But about the beginning of December, it was evident that the man was getting worse. The bloating of his face increased; the veins were conspicuously larger; the breathing was shorter; he was frequently seized with choking paroxysms of breathlessness, in some of which it seemed as if his life was threatened; his face became dusky, and his ears of a deep purple; the eyes more prominent, and the eyelids more œdematous; the voice became more husky, and the speech more broken from the breathlessness. The absence of respiratory murmur, at first confined to the upper part of the lung, and especially the front, gradually crept down the lung, so that none remained even at the base in front, and very little at the base behind, where, moreover, the percussion became slightly affected. He latterly showed a great tendency to drowsiness. During my taking notes of another patient's case, whom he accompanied to my house, he was constantly falling forward asleep, and even when I was talking to him, he would fall asleep in a heavy dozy way between the sentences. The last few days that he was in the hospital, he spent nearly all his time sitting up in bed in this lethargic doze. He went on spitting the same material, unchanged, except that, I think, it contained less blood. On Sunday, Jan. 3rd, probably feeling his end approaching, he insisted on leaving the hospital, and within half an hour of his reaching his lodgings he quietly died in bed, having only a few minutes before asked his brother for some cod-liver oil. There was no urgent dyspnœa—no struggle: he was observed to be unconscious; the respirations became slower and fewer, and at last ceased. He therefore probably died by coma.

Post-mortem examination.—On opening the chest, thirty-six hours after death, the right lung was found in front to be converted into a mass of cancer, leaving only a small portion of the base uninvolved. It was universally adherent, and its separation from the chest-wall was very difficult. It was found, *in situ*, before removal, to extend up beneath the clavicle, and across the middle line in the upper third of the mediastinum. The base of the heart was seen to be pushed down by it, so that the axis of the heart, instead of passing downwards obliquely to the left, passed nearly horizontally across. The left lung was found quite unaffected with the disease, and perfectly healthy, except that it was congested. On removal of the entire contents of the chest, the cancerous mass was found to have maintained the conical shape of the lung, except its extention across the middle line in its upper portion. It was firm in consistence, tuberous in outline, and the surface everywhere shreddy, with broken adhesions. It was found completely to have surrounded the superior cava, the right vena innominata, the windpipe at, and a little above, its bifurcation, and the right bronchus. It had completely obliterated the cava, for on cutting into the right auricle, and attempting to thrust the finger into the upper orifice, it was found to be blind—completely occluded. The windpipe and right bronchus were considerably constricted, especially the bronchus, but still pervious. The tumor measured seven inches in its vertical and four in its widest transverse diameter. On cutting it open, it was found to have the many-tinted coloring and "run" look of encephaloid, of which it was a very firm specimen. In one or two parts it had softened, and from the cavities formed by the discharge of the softened material a dingy puriform matter escaped, analogous to that which the patient spat up. The sac of the pericardium was thickened; its cavity contained a considerable quantity of slightly blood-stained fluid, and both the inner surface of the sac and the outer surface of the heart were shreddy with the lymph of recent inflammation, but no actual extension of the cancer to either pericardium or heart could be discovered. No cancer was found in any other organ of the body. The friends, who narrowly watched the examination, would not allow the removal of the diseased parts or any portion of them, so that no more complete dissection or careful drawing of them could be made; but I made the slight sketch, which I now show you, when the impression of what I had seen was still fresh upon my mind.

Such, gentlemen, were the post-mortem revelations of this interesting case. You see how entirely they confirm our diagnosis, how exactly they coincide with the physical signs, and how satisfactorily they account for the symptoms during life.

In conclusion, let me direct your attention to two or three points in the clinical history which appears to me to be worthy of remark.

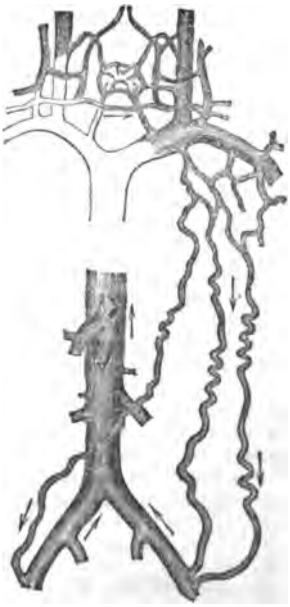
And first, to the connexion between the successive symptoms and the state and stages of the diseased growth. There can be no doubt that the cancerous growth existed some time before the patient was aware of it: for the first symptoms were those which showed that it had already attained some bulk; and even when these arose no other symptoms were present, and the functions of circulation and respiration appeared quite unaffected. This is just what we see in cases of primary cancer of the lung; and it is sometimes surprising how far the disease may advance without revealing itself by what would be thought likely to be its characteristic symptoms. Cases are on record in which the patient has been within a few days of his death before his symptoms have even suggested an examination of his chest. In the next stage of the case we can trace another event in the progress of the diseased growth—namely, its softening, and the breaking of its softened contents into the bronchial tubes. This evidently took place at the time of the sudden appearance of the characteristic expectoration, and accords with the fact of the material being in its maximum quantity at the time of its first appearance—at the time, that is, of its first gush.

And here let me remark to you, in passing, that the one fact to which a nummular character of sputum points is, that the material is something poured into, and not secreted by, the bronchial tubes. You see it in the sputum of pulmonary abscess, of phthisical cavity, of such a case as this, of abscess bursting into the lung from without, &c.

But to return to our patient. A third event, with regard to the cancerous disease, revealed itself by certain outward signs as the case advanced—namely, its growth, and the constantly increasing pressure resulting from it. We could trace, day by day, in the diminution of the respiratory murmur in that part of the right lung that was unaffected by the disease, the tightening grip of the cancerous mass around the right bronchus. As the bronchus became more and more constricted, the supply of air to the corresponding lung became, of course, more and more scanty. This was the interpretation that we put upon the almost complete suppression of breath-sound which existed in the lower part of the right lung before death; and the post-mortem conditions fully confirmed the opinion. The right bronchus was just pervious, and no more. We knew that the gradual loss of the respiratory murmur was not due to the invasion of the lung by cancer, because the percussion remained resonant.

If the source of the pressure was constantly increasing, as it undoubtedly was, how are we to explain the diminution of the swelling in the head, face, and arms,—amounting in the arms to its almost total disappearance? To the more complete establishment, doubtless, of the collateral circulation, and the greater freedom with which the blood got back by the vicarious channels thus formed; just as the œdema of phlebitis subsides, although the inflamed and obstructed veins never become pervious.

There was one point that puzzled me a good deal. The enlargement of the superficial veins of the chest was evidently due to pressure on the deeper vessels. The source of this pressure was clearly on the right side; and yet it was on the left side that the superficial veins of the chest were enlarged, and not on the right, where they were not enlarged at all, and were absolutely invisible. What made this the more striking was, that the superficial veins of the abdomen were enlarged on *both* sides, but communicated above solely with the veins of the left side of the chest, as shown in the diagram. Now, how was this? I must confess that at first it puzzled me; but a little thought—a very little thought—sufficed to clear up the difficulty. The enlarge



ment of the veins was due to their conveying an inordinate quantity of blood. It was necessary, then, that the blood should have free access to them; but it was manifest that if the pressure on the large venous trunks from which they sprang was increased up to a certain point, they would become obliterated, and thus no blood would be able to reach the superficial veins springing from them. We had only then to imagine that on the right side of the chest the pressure had reached this point, and that the right innominate and subclavian veins were compressed to obliteration, in order to understand the absence of enlargement of the superficial veins of the chest on the right side; and the compatibility of this with the dextral situation of the disease exercising the pressure. We see, then, that pressure up to a certain point may produce enlargement of veins, but, carried beyond that point, may produce their disappearance; and that enlarged veins may show, not on which side the disease *is*, but on which it is *not*. This is a consideration well worth bearing in mind, and that may be of great importance in influencing our diagnosis, especially in relation to localisation.

Let me say a word or two in explanation of the diagram. The dark parts are those through which the blood flowed; the parts in outline are those which were obliterated by pressure, and through which there was no circulation. The indication of the path by which the blood from the right upper extremity and right side of the head and neck passed to the left side, in order to reach the inferior cava, is hypothetical; the rest of the diagram is in no way hypothetical, but merely represents that of which we had positive evidence both during life and after death. The arrows indicate the course of the blood-stream.

In the three most characteristic circumstances of primary cancer of the lung this case illustrates what is the rule. Such cancer generally affects only one lung; that lung is commonly the right lung; and the variety is encephaloid. Why this should be so I cannot say, but so it is; and the case before us was, in these respects, in strict conformity with the laws of the disease.

With regard to *treatment*, gentlemen, I need not tell you that I have *nothing* to tell you. The diagnosis of such a case carries with it not only the prognosis, but the therapeutics also. Indeed, therapeutics has no place in such a case. We can only look on as impotent spectators, and watch the gradual extension of the disease, whose progress we can neither accelerate nor retard. I doubt if we can in such a case put off the final catastrophe for a single hour. The only thing that can be done is to alleviate, as far as they admit of alleviation, the most distressing symptoms, and to conduce, as much as we may, to the *euthanasia*. Probably, our really efficient pharmacopœia for such cases begins and ends with opium.

LECTURE II.

ON CASES ILLUSTRATING THE INFLUENCE OF CONVECTION IN DETERMINING THE SEAT OF CARDIAC MURMURS.

You all know, gentlemen, that the opinion we form of the nature and cause of a cardiac murmur, in any particular case, is determined by two considerations — time and place. Given the period in the heart's cycle of movements at which the sound is heard, and the point on the chest's surface at which the sound is the most intense, and from these two points we deduce, and generally correctly deduce, our conclusions as to the valve affected, and the way in which its action is deranged. Thus, if the murmur is most intense at the base, we say that the aortic or pulmonic valves are affected; if at or near the apex, the auriculo-ventricular; and we say so because these parts are nearest these valves respectively, and because we know that, as a rule, the loudness of a conducted sound is in inverse proportion to the length of the conducting medium. Having fixed the orifice, we then ask ourselves what is taking place at that orifice at the particular time at which we hear the sound—whether the blood is passing forwards through, or recoiling upon, the valve; and this determines at once, with a certainty that admits of no alternative, whether the murmur is one indicating obstruction or regurgitation—whether the injury to the valve is such as opposes the onward movement of the blood, or permits its reflux.

Now all this is very simple and very intelligible, and clinical observation, and the revelations of the dead-house, show us every day that, in the main, it is sound. But now and then we meet with cases in which this reasoning would lead us wrong, and still oftener with cases in which, although the correctness of our diagnosis would not be in danger, we should find ourselves unable to explain the exact localisation of the murmur, and its point of greatest intensity, on the simple grounds I have just enunciated.

The fact is, the localisation of cardiac murmurs is commonly regarded as determined by one agency, *conduction;* whereas in reality it is determied by two agencies, *conduction* and *convection;* and where the principle of convection determines it we should be utterly foiled in endeavoring to explain what we find on the principle of conduction, and should run, by relying on this principle alone, great risk of falling into serious error.

Now let me just explain to you the difference between conduction and convection, and then you will see how differently they would localise the same sound arising at the same point within the heart. The conduction of sound is, as you know, its transmission by the vibration of the particles of the conducting medium: but these particles do not change their place; the waves of vibration or undulation pass through them (are indeed affected by them), but the particles remain where they were before. The convection of sound, on the other hand, is its transference from one place to another by and through the movement of the conveying medium. Conduction depends on atomic movement; convection on movement in mass. Conduction, the medium being the same throughout, is the same in all directions; convection takes place only in one direction, the direction namely, in which the medium is moving. Conduction may be effected by solids and fluids alike; convection only by fluids, or by solids suspended in fluids, so as to have free movement. As an example of conduction, I may instance the sound heard on applying the ear to one end of a piece of timber when the other is scratched by a pin; as an example of convection, the sound of distant bells wafted by the wind. Sometimes conduction and convection act in concert, sometimes in opposition; in the one instance convection greatly aids conduction, in the other it tends to neutralise it. As an illustration of this I may recur to the example which I have just instanced — the effect of wind in conveying the sound of bells. If the air is calm the sound is conveyed equally in all directions; but if there is a strong wind it is heard much further in the direction in which the wind is blowing; while in the direction *from* which it is blowing it will be inaudible at a very short distance.

I think this explanation will be sufficient to make intelligible to you what I mean by the convection of sound. You see it is necessary, first, that the particles of the fluid should be in a state of sonorous undulation, and then that the whole body of the fluid should be in motion, whereby the direction in which these undulations shall be propagated is determined.

Let us now apply these principles to the elucidation of certain phenomena which we discover in the ascultation of cardiac murmurs.

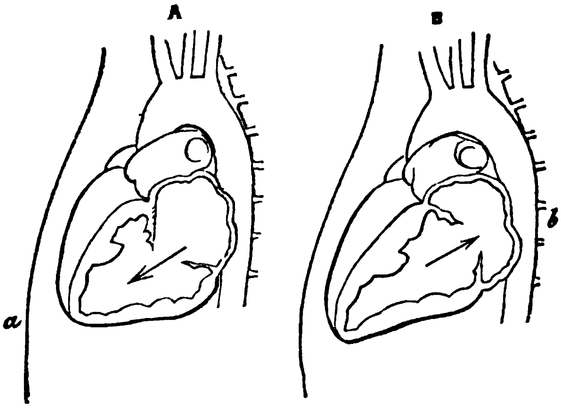
In cases of valvular disease of the heart we have all the conditions necessary for the convection of sound. In the healthy state of the heart we have not. In health the blood only moves one way — forwards; and its forward movement appears to generate no sound; both the sounds of the heart coincide with, and depend on the closure of orifices (and, therefore, with the cessation of blood movement) at the point where they are generated;—where the blood is moving there is no sound, and where the sound is produced there is no blood movement. But in disease, such as to generate cardiac murmurs, the conditions of health are abrogated in both these particulars; for, in the first place, the blood, in passing through the orifices, is thrown into sonorous vibrations; and, in the second place, it often moves both ways — backwards as well as forwards. Thus the vibrations of which the blood is the vehicle may be transmitted either in the one direction or the other, according to which way it is passing through the orifice at the time the murmur is generated. So that we frequently see in heart-disease a manifestation of departure from health in two ways—a development of vibrations that ought not to exist, and an alternative of directions in which these vibrations shall be carried.

Case 1.—The first case to which I will direct your attention, in illustration of what I have just said, is that of James W——, a stout, strong, healthy-looking young man, but with a slightly puffed and bloated face, nineteen years of age, and by occupation a farm laborer. He was quite well, up to five years ago, when, being fourteen years of age, he had rheumatic fever. He was laid up with it a month, immovable in bed, and during his attack suffered from pain in his chest, shortness of breath, and palpitation. From that time he was unable to get about as quickly as he did before, on account of shortness of his breath and beating of his heart. He did his farm-work, however, without inconvenience till two years ago, when he began to be seized, on making any violent exertion, or walking fast, with a pain in the left breast, left shoulder, arm and hand, and left leg down to the knee. The pain obliged him to stop whatever he might be doing, and then after he had stood still or sat down for five minutes, it would pass off and he would resume his work. In a quarter of an hour, perhaps, he would be seized again, and again have to stop; and so he would go on all day. The paroxysms of pain were always on the left side of the body, but shooting sometimes a little to the right of the upper sternum; they were accompanied with a sensation of faintness and sickness, a fluttering beating of the heart, and a feeling that if he did not stand still he should drop. The attacks of palpitation would sometimes seize him when he was still, but unaccompanied with the other symptoms. In this way he went on, getting worse and worse, and less and less able to do his work, till nine weeks ago (three weeks before he came into the hospital), when he found he could not continue the struggle any longer, and finally gave up. On admission, his state was found to correspond with his description; his breath and pulse being much accelerated by any exertion: when at rest I found them to be 28 and 112 respectively; pulse very small, but regular.

Physical examination.—On exposing the chest a great prominence and bulging of the left side is conspicuous, involving the whole precordial region, and extending even beyond it; it affects chiefly the cartilages of the fourth, fifth, sixth, and seventh ribs on the left side. Over the whole seat of this bulging the heart is seen beating with a heaving action, and even down into the epigastrium, and along into the left hypochondrium. The precordial dullness is commensurately extended, across considerably to the right of the lower sternum, well down into the epigastrium, and even below the margin of the left false ribs. The apex beat is a good inch lower than natural. At the base the second sound is a little indistinct, but the first sound does not seem to be modified. At the apex a grinding bruit is heard, *immediately preceding an apparently natural first sound*, and terminated by it. On working back well into the axilla, and not until the axilla is quite reached, a *systolic* murmur begins to reveal itself, increasing in distinctness as you work round to the back, where it is loud and strong. It is audible over the whole of the left side of the back. On returning again to the front, to the region of the apex, it is quite lost, and the pre-systolic bruit is again heard.

Here we have two murmurs, both of them undoubtedly generated at the same orifice,—both of them mitral,—but which, though originating at the same point, are conveyed to the chest-wall in such different directions, that not only do their points of maximum intensity differ, but there is not any one point in the chest where they are both of them audible. At the apex, where you hear the pre-systolic sound you cannot hear the systolic, and when you have moved within the range of the systolic, you have lost the pre-systolic. So that although the mitral orifice is the seat of a double murmur there is no one point in the chest's surface where it does not appear to be single. Now, on the principle of *conduction* this would be inexplicable. Starting from the same point both the murmurs ought to be equally, or at least proportionately, audible at any point of the surface of the chest; where you hear the one you should also hear the other. But on the principle of *convection* the thing becomes immediately ntelligible. At the time of the pre-systolic murmur the blood is rushing forwards through the mitral orifice towards the apex, and carries the murmur thither; at the time of the systolic murmur the blood is rushing back though the mitral orifice into the auricle, and carries the murmur thither. And not only does the blood-stream carry the vibrations in these respective directions at these respective times, but prevents that conduction of them in the opposite directions which would otherwise take place: the blood rushing foreward just before the systole prevents the pre-systolic murmur being heard behind, while the blood rushing backwards *at* the systole prevents the systolic murmur being heard in front; just as a high wind prevents the sound of bells being heard at a distance to windward, at which if the air was calm, it would be perfectly audible.

Your comprehension of the different direction that mitral murmurs take, according as they are systolic or pre-systolic—regurgitant or obstructive,—may be facilitated by reference to this diagram, which I have altered from a sketch kindly lent me by Dr. Sibson, and for the accuracy of which, therefore, at least as far as the original is concerned, I need not vouch. It represents a lateral view of the heart, seen from the left, the left chambers, auricle and ventricle, being opened by an imaginary antero-posterior section through them, including the auriculo-ventricular orifice and valve. The anterior border is that of the right ventricle; the truncated vessel springing from it above, the pulmonary artery; above that again you see the arch of the aorta, and behind the descending aorta are indicated the bodies of the vertebræ with which the vessel is in contact. A represents the period of the pre-systole—that is, the moment when the auricle is just contracting to distend the ventricle with its last blood; B represents the period of the systole, or contraction of the ventricle. The valves in both cases are imagined so diseased as to offer obstruction in the one instance, and permit reflux in the other. The arrows indicate the course of the blood-stream at the respective periods. In Fig. A you see the direction of the blood-stream at the moment that a pre-systolic murmur would be produced; that it is downwards and forwards and that by it the sound would be carried directly to the heart's apex, and therefore have its maximum intensity at *a*. In Fig. B you see the direction of the blood-stream at the moment a systolic murmur would be produced; that it is backwards, and that by it the sound would be carried into the auricle, and therefore be audible at *b*, in the neighborhood of the spine and left scapula.



I do not know that I ever met with a case before in which a mitral regurgitant murmur appeared to be absolutely inaudible at the apex; and in this respect the case is remarkable. But I have habitually met with cases, and pointed them out to you, in which such a murmur is very feeble at the apex, and much clearer and louder in the direction of the axilla; and I am sure it is a mistake to make the apex, as is commonly done in books, the seat of the maximum intensity of mitral systolic murmurs. I would go so far as to say, that in my experience the true apex is never the seat of *maximum intensity* of mitral systolic murmurs; that I have never met with one in which the sound did not come out clearer on leaving the apex, and passing to the axillary side of it. Dr. Walshe states that such murmurs may be "audible, or not, round the lateral base of the chest from the cardiac to the scapular region." As far as my memory serves me, I have never met with, one that was not so audible. Nor do I believe with Dr. Sibson, that the reason why the murmur *appears* louder as you pass to the left of the apex is, that in this direction you lose the normal element of the first sound, but retain the murmur, which, therefore, is better heard, but is not really louder. I believe the murmur itself is louder, often much louder; and I am sure that you, gentlemen, will bear me out in this, from many cases that I have pointed out to you. But this is a very different thing from a mitral systolic murmur being *absolutely inaudible* at the apex. Whether this inaudibleness was apparent and not real—whether there was a faint murmur at the apex during the systole, but so feeble as to be completely masked by the loud pre-systolic murmur that immediately preceded it; or whether, if there was no sound whatever, its absence was due to the small amount of blood in the ventricle, in consequence of the mitral constriction which the pre-systolic sound indicated, I will not say.

This case proves another point: it proves that a valve sufficiently imperfect to allow regurgitation, and give rise to a considerable regurgitant murmur, may nevertheless close sufficiently sharply and completely to generate a natural first sound; for at the apex the pre-systolic murmur was heard "immediately preceding *apparently natural* first sound," although, on working round to the axilla and back, undoubted evidence of mitral regurgitation revealed itself. The mere fact, therefore, that in certain situations either of the cardiac sounds has a natural character cannot be taken as safe and sufficient evidence that the valve-closure which gives rise to that sound is complete, and that there is no reflux.

And it proves yet another point: that sounds generated by blood-friction and sounds generated by valve-tension are not conducted by the same means or medium. Between the valve and the wall of the ventricle there is direct continuity of structure and therefore the natural element of the first sound, due to the sudden tension and shock of the valve, is conveyed by the ventricular wall to the apex. Not so the murmur—the blood is the seat of that, not the valve; and as the blood is the seat of it, so is the blood the vehicle of it; and since all the blood the seat of it passes back into the auricle, thither, and thither alone, is the sound conveyed. And I hold that (in this case at least) the absence of any portion of the systolic murmur at the apex a proof that no vibrations of the valve were concerned in its production, for if they had been, what was to prevent their conduction to the apex in the same way as the tension-sound?

To be continued.)

Clinical Lecture
ON
POPLITEAL ANEURISM.

Delivered at the Queen's Hospital Birmingham,

By James F. West, F.R.C.S. (Exam).

Senior Surgeon to the Hospital.

Gentlemen — the case of popliteal aneurism which I am about to bring under your observation is note-worthy as affording in itself an almost complete epitome of the different modes of treatment, both internal and external, now adopted for that disease. I will read the notes of the case, from which you will perceive that low diet, rest, digitalis in full doses, the application of ice, the administration of acetate of lead, flexion, instrumental compression, and lastly digital compression, were each in succession employed without producing any permanent benefit; and that at last, after the failure of these various measures, each of which has its advocates, and has been known to prove highly successful, the Hunterian operation, or ligature of the femoral artery some distance above the seat of the aneurism, was had recourse to, and sufficed to effect a cure.

Robert K——, blacksmith's striker, aged twenty-eight, was admitted March 17th, 1868, with popliteal aneurism. About the Christmas previous he felt a constant aching pain in his right popliteal space, for which he could assign no specific cause, except that his work is very laborious, and that while engaged at it he stood with his back opposite to a large fire, from which there was a great heat. A fortnight afterwards he noticed a small tumor, of the size of a marble, in the ham. It gradually increased, till it became as large as a hen's egg, and then he for the first time noticed pulsation in it. Pain now began to shoot from the popliteal space up the centre of the back of the thigh, and down the back of the leg to the outer malleolus, and it was aggravated at night. Numbness, with occasionally a pricking sensation, was felt at the outer part of the right ankle, and the right foot appeared colder than the left. At the present time pain is not felt in the popliteal region except the tumor is handled, or when the limb has lain long in one position. The superficial veins of the leg are congested, and there is a slight œdema below the knee. The tumor is oval in shape, as large as an orange, gives very marked sense of pulsation and a dilating impulse to the fingers, which ceases when the femoral artery is compressed. A bruit is distinguished in it by the stethoscope. Firm pressure on the tumor and on the femoral above the tumor causes it to disappear.

			Right side.	Left side.
Circumference of limb	at	centre of thigh,	18 inches	17 inches.
"	"	knee, over patella,	15 "	13 1-4 "
"	"	calf of leg.	14 1-4 "	11 3-4 "
"	"	below malleoli,	10 1-2 "	10 "

The patient is a short, thick-set man, of plethoric habit, florid complexion, sanguine temperament has hitherto enjoyed excellent health, and is of a healthy family; has never had syphilis or taken mercury; drinks ordinarily a fair quantity of beer but no spirits, and considers himself a temperate man; pulse 90, full and bounding; appetite and digestion good. He was ordered to remain in bed, and to have broth diet. To take an opiate each night, with a view of relieving pain; and a full dose of compound jalap powder each morning. The limb to be bandaged, and the region of the knee to be kept cool by spirit lotion.

March 20th.—Flexion treatment commenced: the leg being flexed on the thigh, and fixed in that position by a strap which extended from the heel of his slipper to a belt which was placed round the waist. Bandages, beginning at the toes were carried up to the middle of the thigh, so as to prevent swelling of the limb. About twenty minutes after flexion was commenced great pain was felt radiating from the popliteal space, both upwards and downwards; but in about half an hour after this the pain diminished, and the limb became easier in the flexed position than it had been before. He was ordered to continue on low diet, and to have tincture of digitalis, in half-drachm doses, three times a day. In the evening the tumor felt a little firmer, but the pulsation was not less distinct.

21st.—Flexion is borne well; pulse 74. Temperature of right popliteal space, 97 1-5°; of left, 96 1-5°. Left posterior tibial pulse 80, full; right 80, weak.

	Right.	Left.
Measurement of middle of thigh	18 in.	17 in.
" over patella	15 in.	12¼ in.
calf.	14 in.	12 in.

A bag of ice to be applied over the tumor.

22nd.—Flexion is causing some pain and increased swelling in the lower part of the thigh; superficial veins more prominent. The digitalis does not seem to have produced any effect. Pulse 96, full and bounding; skin hot, but moist; tongue furred: bowels confined. To continue the use of digitalis, and also flexion and ice, and to take ten grains of compound colocynth pill at once.

23rd.—Pulsation less distinct; pulse 84, still full; leg flexed a little more.

24th.—Sleeps well; says he feels perfectly comfortable, and has scarcely any pain in the leg. Pulse 72, less bounding. The leg to be more flexed on the thigh.

25th.—Little or no pulsation can be felt in the tumor The œdema of the leg and foot are considerably diminished, and the superficial veins are not so prominent. Has no pain in the limb. Flexed position still maintained and ice applied.

			Right.	Left.
Measurement	at	lower third of thigh	... 15½ in.	... 15 in.
"	"	knee over patella.	... 16½ in.	... 12½ in.

To take a draught, consisting of dilute acetic acid, five minims; tincture of digitalis, fifteen minims; acetate of lead, two grains; water, one ounce: three times a day.

29th.—Symptoms as before. Flexion well maintained, and without inconvenience to the patient. Ice caused considerable pain, and was therefore discontinued last night.

April 1st.—Upon extending the limb to-day for the first time, I found that the pulsation in the tumor was as forcible as ever, and that its size was little altered, while there was an increase of swelling and pulsation in the situation of Hunter's canal. I therefore ordered the flexion plan to be discontinued, and a horseshoe tourniquet to be applied lightly over the common femoral. Pressure was borne with great pain for an hour; but the tourniquet was then obliged to be discontinued, and then the pulsation was as marked as before.

During the next four days attempts were made to apply the compression plan; but the tourniquet could never be borne for more than an hour or two in consequence of the severe pain it produced in the limb. The limb was during this time bandaged, and placed on a pillow on its outer side, the leg being moderately flexed on the thigh, as that position gave the patient greater ease.

10th.—Digital compression of the femoral artery was applied for two hours. It was borne without much pain; but, on its discontinuance, the limb was more painful than before.

11th.—Digital pressure again applied for two hours, but with the same result.

12th.—Digital pressure applied for one hour. No reduction of the size of the tumor, or diminution of the pulsation in it, followed the use of the digital pressure.

15th.—As neither the constitutional nor local treatment seemed to have any effect on the tumor, but that it gradually enlarged, particularly in the direction of Hunter's canal, and that it became more painful, I determined, after consultation with my colleagues, to ligature the superficial femoral at the apex of Scarp's triangle. I commenced my incision about four fingers' breadth below Poupart's ligament, and carried it downwards three inches in a direction parallel to the vessel. After a careful dissection, the inner margin of the sartorius muscle was exposed; and this having been turned outwards, the sheath of the vessel was brought into view. I made a very small horizontal incision into it, and then very carefully passed the aneurism needle under the vessel from within outwards. The artery was then tied, with the effect of completely arresting pulsation in the tumor. One small vessel required a ligature during the operation, as the blood from it obscured the parts. The edges of the wound were brought together with three points of silver suture, and the limb ordered to be placed in a semiflexed position and enveloped in cotton-wool, In the evening he appeared comfortable. Pulse 87; respiration 21; temperature 99°. The temperature of the limb excellent. Ordered a morphia draught, and low diet.

16th.—Has had a good night. Temperature of right limb quite restored, and even higher than that of the left. Complains of thirst; tongue furred; pulse 100; respiration 27; temperature 102°. Ordered effervescing saline draught.

17th.—Passed a comfortable night, and makes no complaint, except that of feeling pain in the foot and up the leg as far as the calf. Pulse 100; respiration 21; temperature 101°.

18th.—There is a slight erythematous flush over the middle of the thigh, especially along the course of the vessel, below the point where the ligature was applied. Wound is suppurating freely. Pulse 110; respiration 21; temperature 102°. Ordered warm-water dressing in place of dry lint.

19th.—Going on well in every respect. The erythematous blush has almost disappeared. Pulse 90; respiration 20; temperature 100°. To have light pudding.

22nd.—Improving both constitutionally and locally. No pain; wound contracting rapidly. Tumor in the ham feels firmer and is considerably diminished in size. The ligature applied to the small vessel came away to-day; the sutures were removed, and strapping applied.

28th.—Wound perfectly healed, except at the point where the femoral ligature protrudes. General condition good. To have a mutton chop.

May 9th.—The ligature on the femoral artery came away.

During the next week the discharge from the wound became gradually less, and by the 16th stopped altogether. A little swelling then began about the middle of the thigh, over the femoral artery, which by the 24th got as large as a hen's egg and it felt very hard and tender on pressure. The wound then began to discharge a little. Lead lotion was applied to the enlargement, and perfect rest enjoined. Under this treatment the swelling became smaller and softer. By June 1st, it had quite gone, and the wound had ceased discharging. He reported himself as feeling quite well, and was allowed to get up. The tumor in the popliteal space felt much firmer and smaller, and had no trace of pulsation. The limb was stiff at first, but after a few days he was able to walk with comfort; and about the middle of June I allowed him to leave the hospital.

This, gentlemen, is a typical case, as regards its history and symptoms, of true aneurism, resulting spontaneously without any strain or other injury, and probably due to an atheromatous condition of the popliteal artery. Its insidious approach is noticeable. Probably the coats of the vessel gave way gradually from within outwards, until only the firm fibrous outer coat remained; but this becoming expanded by the constant impulse of the current of blood, allowed a pouch-like tumor to form in the ham, which first attracted attention when it produced pain by pressing on the surrounding parts, and notably on the popliteal nerve.

You will find that aneurisms in this situation, even when small, cause much greater pain than femoral or inguinal aneurisms of much larger size. You recently had an opportunity of seeing, in the case of Henry B——, who had a large aneurism in Scarpa's triangle, how little suffering was experienced by the patient with a tumor as large as a child's head; while this man was constantly in most acute pain from the pressure which this comparatively small tumor exercised on the nerve lying in its immediate vicidity.

The ham is the most common site for surgical aneurisms, and this is due to two causes—First, because the popliteal artery here lies almost in contact with the knee-joint, and is, therefore, exposed to inordinate flexion and extension when vigorous movements of the limb are made, as in riding, running, or jumping; Second, because at this point the popliteal artery here divides into two main branches, the anterior and posterior tibial arteries—and all aneurisms seem to choose as their favorite habitat a point where an artery either divides or else gives off an important branch. Most commonly you will find on inquiry that the patient can recall some period of great exertion when the aneurism appeared to take its rise; but in this man nothing of the sort could be remembered, although from the nature of his trade, it is highly probable that the violent mucsular efforts he was called on to make were sufficient to cause a giving way of the vessel at a point where it was already weakened by a constitutional disease.

Now what do you think would have been the course of this aneurism if left to itself? What in fact, is the natural history of these aneurisma, tumors? You will find that these tumors occasionally cure themselves if they are left alone, and from the consideration of the means by which Nature effects a cure in such cases, you may learn how most effectually to direct your efforts to the same end.

There are four principal ways in which an aneurism may, unassisted by surgical aid, put an end to itself.

1. A clot may be dislodged from the interior of the aneurismal sac, and become impacted in the vessel on which it is situated, at some point above the aneurism.

2. The sac may become so large as to press upon the artery above the aneurism, and so prevent the passage of blood into it.

3. Plastic inflammation may arise either within or around the sac, and this may lead to coagulation and consequent consolidation of the blood in the interior of the aneurism.

4. Suppuration or gangrene of the sac may take place. When the sac bursts from either cause, a great gush of blood would naturally occur, from the effects of which the patient would faint. While in this condition, clots may form in the proximal and distal ends of the artery, which would prevent any further loss of blood; and in time the parts would fill up with healthy granulations, and so the aneurism become obliterated.

Now attempts have been made to cure aneurisms on each of these principles.

1. Thus, following the first plan, Sir Wm. Fergusson has recommended the treatment of aneurisms by manipulation, and he has succeeded in several cases in dislodging a portion of clot from the interior of the sac, and in getting it impacted in the aperture by which the blood enters the aneurism.

2. The next mode in which Nature cures an aneurism—i. e., by pressing on the vessel at some point above the seat of disease is imitated in the various modes of treatment by compression. Thus it has been proposed to arrest the circulation *altogether*, and this plan, according to Dr. Mapother and other surgeons, has been very beneficial in many cases; or to moderate the force of the current of blood through the aneurism, so as to allow time for the deposition of clot within it, and its subsequent conversion into organized tissue, by which the cavity in the course of the vessel may be filled up. Compression has been effected by various instruments (tourniquets), by flexion of the limb, or by pressure of the thumbs; but in whatever way it is employed, the object is always the same—namely, either to prevent the access of blood to the aneurism, or to moderate the force of the circulation through it. The plan of instrumental compression was suggested by Hutton and Bellingham, and has been chiefly advocated by the Dublin school of surgery; that of digital pressure has been most successful in the hands of Professor Vanzetti, of Padua; while the treatment by flexion owes its origin to Mr. Ernest Hart, and has been ably advocated by him as specially applicable to cases of popliteal aneurism.

3. The third means which Nature sometimes, though rarely, employs for the cure of an aneurism—that by inflammation and consequent consolidation of the parts within the sac—has its analogue in the use of such measures as the application of ice or refrigerating mixtures, in galvano-puncture, and in coagulating injections. All these plans are apt to fail from our inability to produce more than mere coagulation of the blood within the sac, instead of that deposition of firm, fibrinous, laminated clot by which true aneurisms can alone be obliterated. Galvano-puncture and coagulating injections are equally open to objection from their tendency to set up such an amount of inflammation as may lead to suppuration or even to gangrene of the sac and its contents.

4. This brings us to the last way in which aneurisms may be cured naturally—that is, when by excessive tension of the surrounding parts, or by suppurative or gangrenous inflammation within the sac, the aneurism bursts and discharges itself. This mode was closely imitated by the surgeons of past ages, who boldly laid open the sac, turned out the blood, and secured the artery at the point from which the aneurism appeared to spring. This practice was universally followed until the superior advantages of the Hunterian mode of applying the ligature became known. It has recently, however, been revived, in a modified form by Professor Syme, and practised by him with great success in cases of gluteal, axillary, and inguinal aneurism. The aneurism is opened cautiously with a knife; first, one finger, and then, if necessary, the others are introduced, and the point from which the aneurism springs having been reached, it is commanded by the pressure of the forefinger. The sac is then rapidly laid open, the clots turned out, and the vessel secured just above, and also just below, the aneurismal pouch. A remarkable case of this sort, in which large femoral aneurism burst, is recorded in the last volume (50) of the Medico-Chirurgical Society's Transactions, by Mr. John Birkett, of Guy's Hospital, in which he successfully ligatured the femoral artery at the seat of disease. The whole case is full of interest, and Mr. Birkett's remarks upon it, well worthy of your perusal. This plan of treatment is, however, prone to fail from the extreme probability of secondary hemorrhage when the ligature separates from the artery. The coats of a vessel that is extensively affected by atheroma will rarely close and become united after the application of a ligature. The nearer the ligature is applied to the aneurismal tumor, the greater is the probability of that part of the vessel being in an atheromatous state, and consequently so much the greater is the risk of hemorrhage when the ligature comes away.

John Hunter merits the gratitude of all surgeons for having introduced his plan of ligaturing the artery some distance above the seat of disease, and his mode of treatment is now generally practiced. It is in accordance with the principles which he first enunciated that you have seen this case brought to a successful issue. By following them, popliteal aneurism, which was once looked upon as a most fatal disease, may now be treated safely and with the most gratifying results. The femoral artery at the apex of Scarpa's triangle is quite superficial, and does not give off any considerable branch. The application of a ligature in that situation is therefore far from difficult, and it may be looked upon as affording an excellent prospect of a favorable result. Thus, of 110 cases collected by Dr. Crisp, only 12 proved fatal; while Professor Syme tied the femoral artery 23 times without losing a single case.

I have hitherto said nothing of the internal treatment to be adopted in cases of popliteal aneurism. Little can, indeed, be said in its favor. Digitalis and acetate of lead are the chief remedies now in use. The former from its tendency to moderate the force of the heart's action, and the latter from its property of inducing coagulation of the blood, have special claims on our notice; but the time occupied in bringing them into use is often of great importance, and might be more profitably occupied in putting in practice some of the more directly acting external modes of treatment which I have indicated. It may be useful to employ one or both of these remedies while putting in practice either compression or flexion; but I would not recommend you to rely on them solely. Both were used in this case without perceptible advantage. The same may be said of the outward application of ice. It is thought to have the power of promoting coagulation of the blood, and of reducing the bulk of the aneurism; and it may in some cases prove useful; but when employed by itself, I consider it as unreliable, and it is often, as with this patient, productive of great pain.

It remains now to consider briefly those operative measures which were adopted in this case, in order to help you to form a conclusion as to their resrective merits. The various modes of compression were all used.

Flexion was the first method employed; but although it is often exceedingly useful in this form of aneurism, it did not suit this patient. There has recently been afforded you an excellent opportunity of seeing its good effects at the General Hospital in a patient who was under the care of my friend Mr. Bartlett. In the case before us now the process was continued for eleven days, the patient submitting cheerfully to it, although at times it caused him considerable pain; but at the expiration of that time it was given up in consequence of the size of the aneurism having increased in the direction of Hunter's canal, and of the œdema of the limb being rather aggravated than diminished. I would not, however, discourage you from trying the flexion plan of treatment; it is simple, easy of application, and is, as a rule, better borne by patients than mechanical compression.

The tourniquet was next used, the amount of pressure employed being very moderate, in consequence of the excessive pain it caused. The situation of it was frequently changed, but at no point could it be borne for more than an hour at a time. Its application at intervals was perservered with during five days, but it produced, as might have been anticipated from the patient's inability to submit to its thorough employment, little, if any, appreciable diminution of the aneurism.

Digital compression was then had recourse to. It was borne better than instrumental compression; but yet it failed to produce any marked benefit. It was used for two hours on April 10th, again for two hours on the 11th, and for one hour on the 12th; and it may, therefore, be said to have had a fair trial. It is undoubtedly useful in cases of carotid aneurism, where mechanical compression cannot be safely employed; but I do not think it very suitable for popliteal aneurism. One grave objection to its use is that a large number of trained assistants are required, if complete, or even if partial, compression is to be kept up for any length of time. The thumbs soon become tired, and therefore incapable of keeping up efficient pressure, even should the patience of their owners be not exhausted at the same time by the monotony of the task.

Flexion, instrumental, and lastly digital compression, having failed, I proceeded, as a *dernier resort*, to ligature the femoral artery at the apex of Scarpa's triangle.

The operation might, you will perhaps say, have been performed earlier, and so valuable time might have been saved, and the patient would have avoided considerable suffering. But I think that, after the excellent results which have attended the various methods of treatment by compression in the hands of able surgeons of great experience, I should not have been justified in operating without first giving the patient the chance of being relieved by one or other of them. Although neither method was successful, I am not disposed to discard them; and I should employ them again in any similar case in the same order as I did on this patient. I strongly recommend you to adopt the same course in your practice. Ligature of the femoral artery is a comparatively easy operation, and can be performed at any time, should you find that the other means at your disposal have failed; but it should not be done before they have been tried.

One caution I must give you, in conclusion, in reference to the treatment of the case after the operation. It is that you should not be too anxious for the ligature to come away, and therefore that you are not to be pulling at it day after day, as I have seen done, to ascertain if it is ready to come away. In this case it did not separate till the twenty-fourth day, and then it was discharged without any traction being made upon it. By avoiding traction of the ligature you greatly diminish the danger of secondary hæmorrhage.

Clinical Lecture

ON TWO CASES OF

EXCISION OF THE KNEE-JOINT.

By T. B. Curling, F R.S.,

Surgeon to the London Hospital.

Gentlemen,—An able and enterprising surgeon, Dr. Wm. McCormack, of Belfast, in some observations on excision of the knee, quotes a communication from me that "the operation is not much in vogue in the London Hospital." The pupils who have long witnessed the surgical practice here can bear out this statement. The reason is, not because the operation is generally condemned, but because the cases to which it is applicable are not common in our wards. That the chronic disease of the knee-joint will in most instances yield to persevering treatment is a tradition which has long influenced the practice at this hospital. Mr. John Scott, who was surgeon to the hospital from 1827 to 1845, adopting the practice of his father, who had a somewhat empirical reputation, encased diseased knee-joints in camphorated mercurial ointment thickly spread on lint, abundant layers of strapping, and splints moulded to the part. The mild counter-irritation, combined with strict rest to the joint, afforded an excellent chance of cure in many cases of diseased knee, and those who remember Mr. John Scott's practice can bear testimony to the remarkable recoveries which often rewarded his efforts. His younger colleagues, encouraged by his success, have followed out this line of practice, employing usually the more modern application of iodine, instead of mercurial ointment, and they have been greatly aided by the liberality of the Samaritan Society in enabling them to send their patients for a time to the Margate Sea-bathing Infirmary. Of course, other treatment, such as scoring with hot irons or gas cautery, and free incisions into the joint, is resorted to in appropriate cases. So long as the patient is content, and able to wait months and even years, neiter amputation or excision of the knee is performed whilst a reasonable chance exists of curing the disease, and saving the limb without endangering life. When the health breaks down under the irritation of local disease, and it becomes no longer safe to persevere, or when extending disorganisation of the joint evinces the failure of treatment, then the case is often unfit for excision, and amputation is wisely preferred. But, as Professor Humphry remarked in a recent discussion at the Medico-Chirurgical Society, "Time is an important element in a workingman's life." He has often a family to support, becomes impatient, returns to work before disease is quite arrested, and suffers relapses; so that he will gladly submit to an operation which offers the prospect of his regaining shortly a useful limb. This partly explains why an operation, which is one of the rarest in private practice, is not uncommon in some hospitals. The rich patient, in the course of time, gets cured, with probably a stiff joint. The poor patient encounters the risks of a serious operation, and, if fortunate, recovers perhaps with a limb nearly as serviceable. The rarity of excisions of the knee at the London and some other metropolitan hospitals has been alluded to in terms which would seem to imply a backwardness in the surgeons in resorting to modern and improved surgical operations, and we have been reproached with a leaning to the old system of mutilation. Excisions of other joints are not unfrequently performed in the London Hospital. During the last year the elbow was excised in six cases—in four for disease, and in two for recent injury; and you have seen me during the past session excise both the shoulder and the elbow; and if the knee has been subjected to this operation less frequently than elsewhere, the preceding remarks indicate the reasons and justify the practice. During the last winter, however, two cases of chronic disease of the knee-joint in adults came under my care, in which I thought it right to recommend and perform excision. One of them, the first, was certainly quite exceptional. The following are the particulars of the case, from the notes of the dresser, Mr. Ley.

CASE 1.—F. P——, aged twenty-three, an excavator, a hard drinker and an unhealthy-looking man, stated that he got wet five years ago, and had swellings in various parts of the body, including the right knee, and was a patient in Guy's Hospital fourteen weeks. He was discharged cured, and returned to work. Four months afterwards he struck his left knee against a trestle. The knee swelled, and he remained at home three weeks, and then returned to work; but in about six weeks his knee began to swell again, and his left leg to become drawn up. Though suffering from his knee, and any jar caused him great pain, he continued at work until August, 1868, when his leg became so much retracted that his toes only touched the ground. After lying at home some weeks, he applied at the London Hospital, and was admitted Sept. 29th. The joint was considerably enlarged, from thickening of the synovial membrane; but when at rest it was free from pain. A splint was applied, the joint was painted with tincture of iodine, and support was given by strapping. This treatment was continued for two months without any diminution of the swelling or of the contraction. The patient continued in fair health; but, as the disease gave no indication of yielding to treatment, a consultation was held, and my colleagues concurred with me in advising resection. At this period a grating sensation was clearly perceptible on manipulating the joint.

The operation was performed Nov. 25th, a large semilunar incision being made in front of the joint. The limb was afterwards secured in a good position by encasing the thigh and leg separately in plaster of Paris, steady connexion between the two cases being maintained by strong iron wires, two on each side, bent in the middle so as to keep clear of the wound. The limb was placed in a back splint, and swung in a cradle. There was free hæmorrhage during the operation, and several vessels were tied. Slight oozing of blood occurred after the patient was placed in bed, and in the evening hæmorrhage became so considerable that it was necessary to open the flap and to secure two or three vessels. This was easily done without disturbing the casing of the limb. A tourniquet was then placed on the femoral artery, and ice applied to the wound. The patient was so faint from loss of blood that the house-surgeon ordered brandy to be injected in to the rectum. I found him next day weak and pallid, with a pulse scarcely perceptible, in a good deal of pain, which was relieved by hypodermic injection of morphia. His stomach was very irritable, so that he could take only fluids in small quantities.

He continued in a very precarious state for the next three weeks, taking very little food, and suffering from sore-throat and cough. A large abscess formed in the lower part of the back, burst, and discharged a considerable quantity of offensive pus. The wound in the knee looked pale and glassy, and showed no disposition to heal. He got no rest without hypodermic injections of morphia. He afterwards began to mend in health, and the wound in the knee commenced to heal. The discharge from the abscess in the back diminished and at length ceased, and the large sore there gradually healed. The plaster casing was removed at the end of ten weeks (Feb. 5.) The limb was found to be straight and in excellent position, and union sufficiently firm to allow of the patient raising his leg. The wound was healed to a great extent, but there were sinuses which furnished a discharge, and one communicated with an abscess on the outside, which had to be opened. He had a sore from pressure on the back of the heel; this was nearly closed by March 24th, when he was allowed to move about on crutches. There were still some unclosed sinuses. His health was greatly improved, but he was looking pale and out of condition, and on April 1st he was sent down to the Margate Sea-bathing Infirmary. At this date (May 25th) I hear that he had suffered from another abscess, which required to be opened, but that he is doing well, and promises to have a sound limb.

On examination of the parts excised, I found the cartilage removed from the greater portion of the outer condyle of the femur, the bony surface being eburnated, with the edges rough. A similar change had taken place on the corresponding part of the head of the tibia. The cartilage on the inner condyle, and inner part of the head of the tibia was thinned, but still entire. No change had occurred in the articular surfaces of the patella and front of the femur. There was considerable thickening of the synovial membrane, which was also very vascular, and some portions were cut away in the operation.

The next case is from the notes of my dresser Mr. Harvey.

CASE 2.—G. T——, aged twenty-four, a laborer, was admitted into the hospital Jan. 12th, 1869, on account of chronic disease of the right knee-joint. He stated that he first hurt his knee about six years ago, but he suffered very little from it until about thirteen months back, when he was pushed down and again injured his knee, and was laid up with it at home for three months. He then came under my care in the London Hospital. Scott's dressing was applied, and the knee was confined in a gutta-percha splint. This was after a time discontinued, in consequence of an abscess which formed on the outside of the thigh above the joint, and which was opened. He was under treatment in the hospital six months, and was then sent to Brighton, where he remained two months, and then returned home. He continued to suffer severe shooting pains in the knee, which disturbed his rest at night and affected his general health; and after resting at home nine weeks he returned to the hospital and was again admitted. His appearance indicated suffering, and he had evidently lost flesh. On examination, I found the tibia and fibula displaced outwards and backwards, producing great prominence of the inner condyle of the femur, and deformity. The synovial membrane did not appear to be much thickened, and no fluctuation could be detected. The patella was fixed to the femur, and the leg was wasted and greatly contracted. There was great tenderness at the inner part of the knee in the direction of the femur. The continuance of active disease and the very deformed state of the limb led me to recommend excision of the joint; the patient's youth, sound vital organs, and reparative powers, affording a good prospect of a favorable result.

Jan. 20th.—A horse-shoe incision was made in front, and the patella was detached from the femur. Matter flowed from an abcess on the inside connected with the carious part of the femur. The disease in this bone extended so far up that, after romoving the condyles, I found it necessary to saw off a second portion extending nearly to the shaft. A slice having been taken from the tibia, the limb was adjusted in an interrupted casing of plaster Paris. Great care was taken to secure all bleeding vessels, and the flaps were left unadjusted. In a few hours after the operation blood flowed, and some vessels required to be secured. There was also a free oozing from the cut surface of the femur, which was checked by the house-surgeon inserting some cotton wool between this bone and the tibia. Iced water was kept applied to the wound, and next day the edges were secured with metallic sutures, the angles being left free.

With the exception of some constitutional symptoms about the sixth day after the operation, consequent on the confinement of pus, and which were relieved by reopening the sides of the wound, the patient went on very favorably, and his health steadily improved. A small abscess caused by some cotton wool left in the wound had to be opened, and two small pieces of bone were removed from the sinuses. The plaster-of-Paris casing was taken off at the end of eight weeks, when the limb was found firm and in a good straight position. As the sinuses were not closed, he was kept in bed, with the limb bandaged, until the end of April, when he was allowed to move about on crutches. The limb was found to be strong, dut two inches and three-quarters shorter than the other; so a boot with a high cork sole was ordered for him, and he has been discharged from the hospital able to walk with a stick.

On examination of the excised bones the cartilage was found almost entirely removed from the articulating surfaces of the tibia and fibula. The posterior part of the femur was soft and carious, and so wasted by degeneration that the shape of the condyles behind was nearly lost, and carious disease extended above the inner one, and from the intercondyloid notch, towards the shaft. This was the part from which pus escaped in the operation.

I have brought under your notice these two cases as examples of chronic disease of the knee-joint, in which excision was a suitable operation. I have stated that the first case is exceptional, and it is not probable that a similar one will occur in your practice. It is remarkable for the early age at which the change characterising chronic rheumatic arthritis had taken place. This patient, who was only twenty-three years old, but a man of intemperate habits, got wet, and had an attack of rheumatism in the joints at the age of eighteen. The attack must have been severe, for he was fourteen weeks in hospital. Four months only after recovery from this illness he injured his left knee, and it has never been well since. It would appear, then, that the original rheumatic attack determined the special disease in the cartilages and bones, and the subsequent injury set up chronic disease in the synovial membrane. The leg was retracted. He was quite disabled from work, and the prospect of recovering a sound limb under protracted treatment was very unfavorable, and yet his youth offered good hopes of his doing well after operation. There was sufficient to justify excision, but not to warrant amputation. The result is, that the patient has nearly recovered, with a slightly shortened limb, of course stiff, but united in a good position. In the second case, the joint was so extensively disorganised, and the deformity was so great, that it was hopeless to expect to save a useful limb without an operation; and excision preserved one, which, though much shortened, will be far more serviceable to the patient than any artificial stump that might have been adjusted after amputation of the thigh.

The reparative powers and the developed condition of the limbs in young adults, seem to render persons of that age the best suited for excision of a large joint like the knee. The most sanguine advocates of this procedure must admit that it is a severe operation; indeed, I agree with those who regard it as one more severe and attended with greater danger than amputation of the thigh. Statistics of the results of the operation have been adduced in support as well as in opposition to this view. But it is very difficult to draw just conclusions from them, because amputation is performed in cases in which the disease is too extensive to admit of excision, and excision is resorted to in cases in which the surgeon would scarcely be justified in performing amputation—such, for instance, as in the first case. In excision, a very large surface of soft structures is laid bare,—quite as extensive, but not admitting of equal adjustment of parts, as in amputation of the thigh. Then there is a risk of pyæmia—a risk, I suspect, greater after excision than after amputation, owing to the larger amount of cancellous structure of bone divided and exposed in the former. Two cases, which ended fatally from this cause, and in one I was the operator, have occured in the London Hospital. There is some risk, also, of the patient being weakened by secondary hæmorrhage. Notwithstanding the precautions taken, secondary bleeding occurred after both operations in the cases before you; and, in the first one, the amount of blood lost was so considerable as to place the patient almost in danger, and to retard his recovery. Now, it is many years since I have been troubled with secondary hæmorrhage after amputation of the thigh. I do not wish, however, to attach too much importance to this risk in excision, as no doubt by skill and careful watching serious hæmorrhage can be prevented. The liability to bleeding from parts abnormally vascular divided in excision is, however, a point to be borne in mind when performing the operation, and I am therefore particular in directing attention to it.

Those who collect and make public the results of excisions of the knee should not be hasty in their conclusions, for it is often very long before the real issue of a case can be correctly ascertained. It seems pretty certain that a considerable proportion of the patients who recover from the operation fail in regaining a sound and useful limb, and have to submit afterwards to amputaion. Many patients are sent into the country or to the seaside with the hope that restoration to stronger health will promote bony union and cause troublesome sinuses to close. Mr. MacCarthy, the resident medical officer of the Margate Sea-bathing Infirmary, has furnished me with the following report of eight patients who had been sent down from various metropolitan hospitals during the last twelve months:—"1. An adult female came, ten months after operation, with five inches' shortening, and no union, either osseous or fibrous. The limb was kept four months in plaster of Paris; after which she was able to lift her foot from the bed. But this union broke down again; and she returned to London to undergo amputation. 2. A girl aged fourteen, had most extensive sinuses, leading to bare bone. She refused to submit to amputation, left after four months in the infirmary, and has since died. 3. A girl, aged twelve, after sixteen months' residence with exposed bone, discharge, and incomplete union, is improving with a fair prospect of the limb being saved. 4. A lad, aged thirteen, came down, ten months after operation, with bare bone, numerous sinuses, and exhausting discharge. The limb was amputated. 5. A lad, aged thirteen, admitted with the limb in very bad position, numerous sinuses, and bare bone. He was removed after two months, and the result is unknown. Two children, of the age of seven, had limbs firmly united, though one was not in a good position; and a boy, aged eleven, had a limb imperfectly united, and exposed bone at the upper part of the tibia." We must be cautious, however, in drawing conclusions unfavorable to excision of the knee from this report; for we are unable to put against the unsuccessful cases those in our hospitals in which, during the same period, the operation has preserved a useful limb, and promoted restoration to health.

Apparatus of various kinds has been used for securing the limb in good position after the operation. I have found none more convenient or efficient than the interrupted plaster-of-Paris casing, which has been employed in cases of this operation by my colleagues, Messrs. Maunder and Little. The casing seems to combine all the objects desired—firm and continuous support to the limb without undue pressure, and space leaving the wound free for dressings, applications, and the escape of discharges, &c. If the limb swells, and the casing becomes too tight, it can be divided longitudinally, without disturbing the parts or weakening the support.

Original Papers.

ABSCESS OF THE LIVER.—A NEW TREATMENT EMPLOYED SUCCESSFULLY IN FOUR CASES.

By H. Blanc, M.D., M.R.C.S., F.R.G.S., &c.

Staff Assistant Surgeon, Bombay Army, &c.

Hepatitis could very correctly be designated a phlegmon of the liver—an expression not only correct if we consider the symptoms, duration, march, &c., but (a fact of much importance to the subject under consideration) applying also to the termination. Like all phlegmonous inflammations, hepatitis terminates either by delitescence, resolution, or abcess; the tendency to suppuration being, however, the rule, the essential character of this as well as of all phlegmonous inflammations arrived at a certain stage of their development.

It is generally admitted that hepatic abscesses are a frequent consequence of inflammation of the liver; and I may venture to say, that if other diseases affecting the right side were not frequently mistaken for hepatitis, the proportion of abscesses of the liver to hepatitis would be far greater than it actually seems to be. Hepatitis, apart from this tendency to suppuration, is not a dangerous disease: inflammation of the liver *per se* is a far less serious affection than are many ordinary ailments: and were it not for that much-dreaded termination, abcess, hepatitis might be ranged amongst the most trivial of all inflammations; and, far from being one of the greatest evils of tropical climates, it would, as it does in some cases, pass off almost unperceived. The fear of possible suppuration is so great, that some distinguised practitioners from the very beginning are guided in the treatment by this eventuality: "Beware of giving calomel," says Dr. Morehead, "after the first few days, because it tends to bring on the formation of pus."

The prognosis given by all authors on diseases of the liver is always made subordinate to the probability or otherwise of the formation of pus: favorable, even highly so, when delitescence or resolution is still possible; desperate, when an abcess is supposed to be either present or unavoidable. "It is little indeed that we can do for the unhappy sufferer from hepatic abcess." (Sir Ranald Martin: Diseases of Tropical Climates.) "The treatment of suppurative inflammation of the liver is very unsatisfactory." (Budd: Diseases of the Liver.) "It is clear," says Watson, "that from the size of the organ and from its situation in the body, an abcess in the liver can never be otherwise that greatly hazardous." Similar opinions might be extracted from any book treating of the liver, and from every author on the practice of physic. Morehead, Annesley, Hooper, Harpel, Grisolle, Andral, &c., are all unanimous as to the great danger of hepatic abscesses; their prognoses being entirely subordinate to this fact alone.

Hepatitis we know is a frequent disease in India. According to the statistics given by Dr. Morehead, the proportion of hepatitis to strength is about 7·4 per cent.; and in the hospital statistics of European and native troops collected by Dr. Coles, we find that nearly 10 per cent. of the deaths registere damongst Europeans in India during four years from 1856 to 1860 are due to diseases of the liver. The following is an extract from Dr. Coles' report on the registered mortality in the Bombay Presidency for the period extending from 1856 to 1860:—

"From diseases of the liver—	Died
European troops	239
Native troops	68
Prisoners in jail	16
Police force	12

We may naturally infer, although no statement to that effect is given, that a large proportion of the above-mentioned deaths were due to abcesses of the liver.

The two facts, *danger* and *frequency* of hepatic abcesses, being ascertained, let us consider the resources we possess to contend with this formidable disease. The truth is that we have none of any value, none upon which we can rely. I can but repeat here what I have just said whilst speaking of the prognosis of hepatitis, and join Dr. Budd in his conclusion that the treatment of suppurative inflammation of the liver "is very unsatisfactory"

In presence, therefore, of a frequent and dangerous disease, and one without treatment, where even the advocates of that falling idol, calomel, declare, in their despair, that this would-be panacea of all diseases of the liver does more harm than good, I will venture to bring under the notice of the profession a remedy that has proved successful in the few cases in which it has been applied. The treatment I propose is based on the physiology and pathology of phlegmonous abcesses; I will therefore briefly recall here their principal features, in order to make the subject better understood.

"Pus," not being a normal liquid, must sooner or later either be absorbed, transformed, or expelled. The transformations of pus are numerous, varying with the extent of the purulent collection, the locality, the nature of the tissues affected, &c. Expulsion, we know, generally takes place through disorganisation of texture or by ulcerative inflammation. If an abscess is situated externally the process of expulsion by ulcerative inflammation, or, simpler still, by surgical aid, is, as a rule, Nature's or art's adopted mode of evacuating any such collection of purulent matter. When an hepatic abscess is superficial, owing to the nature of the tissue affected, the same natural or artificial evacuation of the abscess is, even under the most favorable circumstances, far from being satisfactory, and when the hepatic abscess is deeply seated any surgical interference is justly condemned. Absorption of pus consists in a separation or decomposition of the liquid, and its disappearance without disorganisation of tissue.

If an hepatic abscess is, in many respects, similar to a phlegmonous abscess, absorption will follow the same rule in both, and lead to the same results. In a phlegmonous abscess the process of absorption is as follows:—1st. Absorption of the part formerly liquid. 2nd. Liquefaction of the pus-globules. The pus-globules are first of all decomposed into granules, and then into almost homogeneous liquid, until they finally disappear.

The most favorable conditions for the absorption of a phlegmonous abscess are—

1st. General health good or not seriously impaired.

2nd. Good local capillary circulation.

3rd. Increased urinary or intestinal secretions.

To these general rules we find some exceptions, and absorption taking place under very different circumstances. For example, large abscesses have been observed to disappear under the influence of a metastasis or of violent, deep perturbation of the general system,—such as is produced by cholera, confluent small-pox, typhus, &c. It is probable that, if any of these violent perturbations occurred in a case of hepathic abscess, we might here also observe the disappearance of the abscess; but, as they are by themselves highly fatal diseases, our hopes of an ultimate recovery would be limited indeed. But we meet frequently with cases in which the most favorable conditions for absorption are one and all present, nevertheless the abscess does not disappear. At first sight this might appear paradoxical; however, it is not so. In a healthy subject, with free circulation and secretions, rendered more active by well-directed therapeutic agents, absorption often takes place; but to no purpose. It is the old story of the labor of Sisyphus—absorption and secretion are both present, but one neutralises the good effects of the other: the abscess remains, nature and science have both failed, health in a short time gives way, secretion then gains on absorption, and the abscess increases. The time comes when the anæmic blood can no more stimulate sufficiently the capillary system: the strength is wasted, the digestion impaired, the kidneys can no more eliminate metamorphosed pus-globules, and in their turn add their own unhealthy secretions to the already gloomy picture. This is no ideal description, but one of every-day occurrence—one no Indian practitioner has not seen over and over again. When the last stroke is added, and the abscess bursts internally or externally, what possible hope remains to the unfortunate sufferer?—and what can science do when death has already marked its victim?

The object of this paper, and the remedy proposed, have both in view the cure of hepatic abscess by absorption. To obtain this desirable end, one thing above all is necessary— hat the secretion of the pus should be stopped; otherwise, in whatever favorable condition the patient may be placed, we shall always fail. We may at first hope against hope; but the end, the fatal end, will be always the same. If we allow secretion to persist, or if it perseveres in spite of our endeavors, we must no more look for recovery by the process of absorption, but trust to some unforeseen circumstance—to one of those fickle fancies of Nature,—and hope that, if the abscess discharges its contents, it will not for once follow the general rule and prove but the fatal termination of our patient's sufferings.

Before we proceed futher, we must say a few words on the membrane in immediate contact with the pus. The lining membrane of a phlegmonous abscess, if we do not place it so high in the primary formation of pus as did Hunter and Delpech, constitutes, however, when once the abscess is formed, a secreting organ. Constantly and without intermission, like a regular secreting gland, the pyogenic membrane pours into its cavity the pus blastema, from which are formed the pus-globules by a special and unknown transformation of proteine and fibrine. But let us now consider the same membrane in a more favorable light. All it requires to become as useful as it was disastrous, is to be so modified in its secretions that, with the same elements, instead of secreting pus blastema, it will generate plastic lymph, reorganise what has been destroyed, fill up the vacuum left by the lost tissues, and ultimately itself disappear after completing the work of restoration. Nor is it impossible to bring on this change, and transform pus blastema into healthy plastic lymph. The inflammation which will succeed to the first will hardly vary in intensity; it will not react unfavorably on the system, and however large the secreting surface may be, scarcely will the pulse beat quicker; it will pass as a good deed, unknown! But this is not all pus will no more be secreted, and at the same time absorption will be stimulated. The new life given to the pyogenic membrane will extend its influence to the whole immediate capillary system. Restoration and absorption work thus hand in hand, urged on together by the same beneficial influence. On this combined effect is based the treatment I have followed. Instead, however, of a good local circulation, general health little impaired, and free secretion, conditions I have given as the most favorable for absorption to take place, I do not fear to accept, as I did, even the opposite conditions; as no sooner will plastic inflammation have modified the abscess than under that influence alone the cause of all anxiety will vanish, and with the disappearance of the local morbid condition the general health will soon be restored.

(To be continued.)

CLINICAL OBSERVATIONS ON LESIONS OF ARTERIES AND SOME EFFECTS OF THE DELIGATION OF THEIR TRUNKS.

By John D. Hill, F.R.C.S.,

Surgeon to the Royal Free Hospital, Assistant Surgeon to the Royal Orthopædic Hospital.

Accidents and injuries to the human body often provide us with opportunities for observation and research which otherwise would perchance seldom occur. By such opportunities we become familiar with the variations in the natural process of repair in structures generally, and are safely guided to the exact period when nature indicates the resources of surgical art. Now of the various structures affected by injury or disease during my hospital career, lesions of arteries have afforded me facilities for remarking some effects of ligaturing their supplying trunks. My attention was first directed to this subject by several concurrent results following operations which were rendered imperative by reason of copious secondary hæmorrhage. In these cases the affected extremities were respectively in a state of inflammation, erysipelas, and phagedena; and it will be observed that in every instance the operation was followed by a twofold issue—namely, (1) the control of hæmorrhage, and (2) the arrest of a morbid process in the extremity. These circumstances were briefly alluded to during a discussion upon Mr. Maunder's paper on ligature of the femoral artery for acute traumatic inflammation of the knee-joint; but the particulars of each case may be of sufficient importance to merit further notice; therefore, by the courtesy of my colleagues, I am permitted to refer to some points connected with that surgical assistance which I was called upon to render.

The first case was one of "acute inflammation of the hand, after an incised wound involving both palmar arches, in which secondary hæmorrhage on the twelfth day necessitated ligature of radial and ulnar arteries."

The patient, John B——, aged fifteen years, a bricklayer's boy, of healthy antecedents, was admitted into the Royal Free Hospital, under the care of Mr. Wakely, on the 2nd of May, 1860. Eleven days previously, whilst whittling with a pocket-knife, he accidentally wounded his left palm, when profuse bleeding ensued. This was controlled by the pressere of a pad and handkerchief, but it recurred on the fourth, seventh, and tenth days, and the friends, having become alarmed, brought him to the hospital. When admitted, bleeding had ceased, and he was suffering from an acutely inflamed incised wound of the left palm, about one inch long, oblique in direction, and parallel to the metacarpal bone of the middle finger from base to centre. The palmar integument was dense, horny, and unyielding: and the subjacent and contiguous tissues as high as the wrist were invaded by the inflammation, which also extended along the absorbent vessels to the axillary glands. Moreover he was very feverish and out of health generally. A purgative having been administered, he was ordered a milk diet, and poppy fomentations to the affected part, which was elevated at an angle of 45 degrees.

At six o'clock on the following morning (May 3rd) the night-nurse summoned me to his bedside I found him very faint, and bleeding from the wound, the dressings and bedclothes being saturated. The hand was tense, shiny, and much swollen, and he complained of a sense of tightness in the limb, and extensive tenderness in the course of the blood vessels, so that pressure could not be borne on the brachial, radial, or ulnar arteries. Chloroform was therefore administered, and pressure on both radial and ulnar arteries was found to control the hæmorrhage, but on compressing each vessel singly, bleeding was only lessened. Under these circumstances, I cut down and ligatured first the radial and then the ulnar artery. Both vessels were large, the radial being equal to the size of a No. 7, and the ulnar of a No. 6 catheter.—9 P. M.; Is now free from pain, and has slept ever since the operation.

May 4th.—All signs of inflammation have disappeared, and excepting the corrugation of the skin arising from the cessation of the inflammatory tension, the hand is reduced to its normal size. The palmar wound is suppurating.

15th (eleventh day after operation).—Ulnar ligature separated to-day.

16.—Radial ligature came away this morning; incised wounds have healed in great part by first intention; palmar wound is cicatrised.

20th.—All the wounds are now healed, and beyond a little stiffness he has good use of the hand. Discharged.

The next case is similar to the preceding, and may thus be described: "Acute inflammation of the hand following a lacerated wound of the thumb, implicating the deep palmar arch; secondary hæmorrhage on the ninth day; ligature of radial artery."

The patient, Charles B——, an attenuated man of thirty-three years, by occupation a tobacconist, and of very intemperate habits, was admitted into the hospital under the care of Mr. Wakely, on the 16th of April, 1862. Nine days previous to admission he received a wound of the left thumb through the bursting of a soda-water bottle. Profuse bleeding followed, and being near St. George's Hospital he was taken there, and treated by the house-surgeon, who arrested hæmorrhage by pressure.

For some days afterwards he went about his business, although the hand was exceedingly painful. At last another attack of hæmorrhage hastily brought him to the Royal Free Hospital at 12 P. M. He was then very faint, and bleeding from a lacerated wound in the ball of the left thumb which coursed obliquely towards the base of the metarcarpal bone of the index finger, about two-thirds of an inch in extent, and implicating the deep palmar arch. The palmar integument was dense and horny, and the hand deep red, shiny, swollen, very painful, and of increased temperature, inflammation extending along the absorbents to the axilla. On applying pressure to the brachial or radial artery pain was produced, but compression of the latter vessel arrested hæmorrhage; therefore I cut down and ligatured it at once. As in the first case, the artery was large, being quite equal tc the size of a No. 7 catheter.

April 17th.—Ten A. M.: Is now free from pain, and the swelling of the hand is considerably reduced; slept well during the night.

18th.—Inflammation has subsided, and no swelling remains beyond the corrugation of skin; palmar wound is suppurating, and incised wound has healed in great part by adhesion.

24th.—Palmar wound is now healed; ligature separated to-day (eighth day).

26th.—Incised wound is sound. Discharged.

A few words now as to the nature and treatment of these wounds implicating the palmar arches. In the first place, the palmar integument, in the case of laborers and artisans, is usually so dense and hypertrophied that the depth of the wound is thereby considerably increased. Next comes the palmar fascia, which, in my experience, is seldom opened in a direct line with integument, and may be so split that its edges are not displaced; hence these conditions render ligature of the retracted vessel a matter of impossibility without enlarging the wound; and for the same reason graduated local pressure, which in other parts of the body can be successfully employed is here often useless. Therefore I am inclined to think both for the safety and comfort of the patient, that it is a wiser proceeding not to delay when ordinary means fail, but to ligature the supplying vessel, rather than search for the palmar branch by enlarging the wound—a course fraught with some danger to the fascia, tendons, and their relations; and on the other hand, the application of local pressure sufficient to arrest hæmorrhage may endanger the vitality of the tissues, or, if insufficient, permit subfascial bleeding; again, where hæmorrhage recurs after the approch of inflammation (as in the foregoing cases), deligation seems to be the safest and best surgery. The large size of the arteries of the wrist would appear to be a necessary consequence of an increased blood-supply to the extremity. This circumstance I have observed on former occasions, both in man and in the lower animals.

The third case, although differing in the type of inflammation from the preceding ones, may be classed with them and thus described: "Phlegmonous erysipelas of left arm, following a lacerated wound of inner aspect of elbow; secondary hæmorrhage on the ninth day; ligature of the brachial artery."

Charles G——, aged twenty-three, potman, was admitted into the hospital under the care of Wm. Weeden Cooke on Nov. 17th, 1864, at 2 A. M. In a state of intoxication he fell down some steps upon the tip of an iron pallisade, which penetrated his left arm; shortly afterwards he was found by a policeman, who, seeing him in a helpless condition and bleeding, brought him to the hospital.

When first seen he was quite blanched, and bleeding had ceased. After removing a large clot of blood, a lacerated wound three inches in extent was found just below the internal condyle of the humerus; this extended through the flexor muscles, ulnar artery, and venæ comites, close to the brachial bifurcation, and exposed a small portion of the radius below its tubercle.

Having ligatured both ends of the wounded vessels I placed the arm upon a rectangular splint and closed the wound, and he was placed on a milk diet. By the third day a good deal of reactionary fever had set in, and he complained of tenderness in the arm, which now began to take on an erysipelatous character. Ordered a good purgative of calomel and colocynth, hot fomentations locally, and an opiate at night.

By the sixth day the arm was tense, brawny, deep red, and much swollen, and the swelling having extended to the upper arm, it was necessary to remove the splint. He was now ordered bark and ammonia, strong beef-tea, eggs, and ten ounces of brandy daily.

Eighth day.—Several abscesses in the areolar tissue were opened to-day, with great relief,

Ninth day (Nov. 26th.)—About 2 o'clock this morning secondary hæmorrhage occurred; and by the time I reached the ward, which was scarcely two minutes afterward, bleeding had ceased, and he was completely blanched and pulseless. The arm was enormously swollen as far as the insertion of the pectoralis major, and blood had evidently infiltrated the tissues about the wound to such an extent that to enlarge it and seek for the bleeding vessel was quite out of the question.

Having administered some brandy, return of animation was soon manifest by a recurrence of hæmorrhage. I now compressed the brachial artery, which commanded all bleeding; but, from the inflamed state of the arm, this caused great pain. Therefore I cut down, and ligatured the vessel in the middle third of its course. This was remarkably large, as in the previous cases, and very deeply situated. Nine hours after the operation inflammation had lessened, and he had slept during the interim.

Nov. 28th.—The arm is not larger than natural.

29th.—Ulner ligature has separated (twelfth day after the accident). Both the wounds are suppurating.

Dec. 8th (twelfth day after the operation).—Brachial ligature came away this morning. The wounds are healing, and the patient is much improved in health.

12th.—Wounds are now healed: action of flexors is somewhat interfered with. To attend as an out patient, and is recommended to use the arm gradually.

Feb. 1st, 1865.—Can now fairly move the flexor muscles, but cannot completely extend the arm because of the deep cicatricial attachment.

The fourth case, although differing in its pathological characters from those which have been described, resembles them in a surgical point of view:—"serpiginous phagedena of stump after amputation of forearm; secondary hæmorrhage: ligature of brachial artery."

James S—, aged thirty-seven, labourer, was admitted into the Royal Free Hospital on October 17th, 1864, under the care of Mr. de Merec. In crossing the street he was knocked down, and the wheel of a van passed over his right hand splitting it up from the commissure of the middle and ring fingers to the articular facets of the semilunar bone. Forty-eight-hours after the accident acute gangrene ensued, necessitating amputation of the forearm in its upper third. The stump progressed tolerably during the first fortnight after the operation, but subsequently a serpiginous form of phagedena, attended with pain, heat, and redness of surrounding tissues, set in; this failing to succumb to any kind of local or constitutional treatment, change of air was advised, and he was made an out-patient on Dec. 3d.

7th.—At 6 A. M. he was attacked with secondary hæmorrhage, and immediately brought to the hospital. Phagedena had extended, and arterial blood was flowing from an ulcer about three inches square. This was, however, controlled by graduated pressure.

26th.—To this time his progress had been unsatisfactory and at 9 o'clock this evening hæmorrhage again occurred. Direct pressure and other means failing, I compressed the brachial in its middle third. As this controlled all bleeding, I cut down and ligatured the vessel. On tightening the ligature the artery became partly severed; I therefore locked a pair of bull-dog forceps above and below the ligature, and then cut the vessel through.

Previous to ligaturing the distal and proximal ends, precaution was taken to unravel several pieces of silk-thread, in order to make a broadish band to encircle the vessel, and so obviate further danger of wounding its external coat. The arterial walls were found thickened, and speckled with a yellowish white deposit, which to the naked eye appeared to infiltrate the middle coats chiefly, but under the microscope seemed to fuse itself into the whole arterial structure. This had all the characteristics of fat. The external had evidently become so incorporated with the middle and internal coats during these morbid changes, that its strength and resistance were lost; indeed this had been attested by the brittle and inelastic state of the vessel, the increase of its calibre, and the slight amount of retraction after severance.

27.—He is very comfortable, and there is no further sign of hæmorrhage.

29th.—Phagedena is now arrested, and the ulcer is inclined to heal.

Jan. 1st, 1865.—Healthy granulations have sprung up, and a fine blue film of skin surrounds the margins of the ulcer.

7th.—The ligature separated this morning, and the ulcer is no larger than a threepenny-piece; wound is granulating.

16th.—Ulcer is cicatrised.

26th.—Wound (incision) is healed.

31st.—During the last few days patient has complained of rheumatic pains in the large joints.

Feb. 1st.—Discharged in good health.

In this case arterial disease probably predisposed the patient to gangrene of the extremity, and also to those molecular changes which subsequently developed in the stump. It would seem paradoxical that increased vascularity and molecular disintegration should co-exist in contigous structures, unless regarded as transitional steps in a morbid process—that is to say, first, in a disturbed or altered arterial circulation; second, in an embarrassed capillary and venous circulation; and, third, in a reactionary circulation, or loss of textural vitality; and some of these changes probably occur when a main vessel has been ligatured. Hæmorrhage may have been due to accidental rupture of a diseased arterial branch; and as to the effect upon the phagedena of ligaturing the main vessel, it may be explained by the reduction of arterial tension. Thus hæmorrhage was controlled, congestion arrested, and the equilibrium of the circulation restored; but it is not improbable that the large arterial trunks were dilated, and thus the anastomotic circulation becoming quickly established, deligation of the main vessel was sufficient to control hæmorrhage without endangering the extremity by too sudden or complete an arrest of the blood current.

The fifth case to which I call attention may be thus described: "Erysipelatous inflammation of a stump after amputation of forearm; secondary hæmorrhage on the eighth day; ligature of brachial artery.

W. C———, aged twenty-four, gasfitter in the service of the Metropolitan Railway Company, of healthy constitution, was admitted into the hospital, under the care of Mr. Gant, on the 18th of August, 1868. Whilst crossing the line he was knocked down by a passing train, and in attempting to save himself his right forearm caught between the wheel and metals, and was severed just above the wrist-joint.

Mr. Gant performed primary amputation in the upper third of the forearm shortly after the accident. From the first his progress was unsatisfactory. Hæmorrhage occurred five hours after the operation, but was arrested by pressure. This was followed by erysipelatous inflammation of the stump, and a recurrence of bleeding, which (on the eighth day) became so excessive that, in Mr. Gant's absence, Mr. Murphy, the house-surgeon, summoned me. I found the patient very faint, and although the tourniquet had been applied to the brachial artery as soon as possible, he had evidently lost a considerable quantity of blood. The limb was swollen and inflamed, and the stump was tense, brawny, and infiltrated with extravasated blood. This had separated the flaps, so that I easily opened up the stump, removed the coagula, and sought for the bleeding vessel. But the latter had retracted beyond view, therefore, without exploring the inflamed tissues further, I cut down and ligatured the brachial artery at the junction of its middle and lower third.

Aug. 27th.—Has passed a comfortable night and inflammation has subsided.

29th.—Is free from pain; stump has commenced granulating.

Sept. 7th—The ligature separated this morning (twelfth day after operation.)

14th.—The wounds are healing by granulation.

28th.—Two or three small spicula of bone have exfoliated, probably the result of inflammatory action having extended to the periosteum.

Oct. 7th.—He is now in good health, and the wounds are quite healed. Discharged with a good stump.

The preceding and the third case are very analogous, and forcibly illustrate the points in question.

I cannot help thinking that the early and repeated attacks of hæmorrhage must have been duo to laceration of one or more vessels above the line of amputation. Such remote arterial injury is occasionally met with when the limb has been torn off between the wheel and flange of a locomotive.

(To be continued.)

SOME OBSERVATIONS ON THE OPERATIONS FOR EXTRACTION OF STONE PERFORMED AT THE LEICESTER INFIRMARY, CONTAINING A STATISTICAL ACCOUNT OF THE LATERAL AND MEDIAN METHODS.

By Thomas W. Benfield, F.R.C.S.,
Senior Surgeon to the Infirmary.

I propose to give some account of the cutting operations for stone performed in the infirmary since the year 1851; and although I find it impossible to enter into the details of all the cases in the short space of time which can be allowed to any readers of papers at such a meeting as the present, think I may venture to intrude upon your time and patience whilst I bring before you some statistics of the operations which have been performed here by the present surgical staff, comparing the methods chiefly adopted elsewhere.

I am led to do this because I believe that the lateral operation, as a general rule, is that which is followed at most of the metropolitan and provincial hospital', and because so high authority as Sir Henry Thompson strongly advocates it in preference to the median method. It may indeed, savor of presumption on my part to oppose, in any way such authority; and therefore, with my comparatively very small experience, I desire only to state facts which come under my own observation, and to elicit at this meeting the results of the experience of those gentlemen whose observation have equalled and exceeded my own, and whose power of concentration and whose judgment have most probably surpassed what it has been my lot to possess.

It is most difficult to obtain a perfect comparative analysis of a large number of cases, because it needs a most minute and accurate detail of all the circumstances—such as age and constitution the nature and size of the calculus, the conditon of the prostate and urethra; and hence the great obstacle to the conveyance of such knowledge as shall unmistakably point to the safest and best method of removing stone from the bladder by lithotomy.

Each surgeon may have his own bias and opinion, dependent on his individual success, and more confidence, therefore, in his accustomed mode of operating, than in that which may have been more successful with others. I have performed both lateral and median operations in several cases, having had only two deaths; and the majority of my operations have been by the median method, or that advocated by Mr. Allarton in a pamphlet which he published in the year 1584;

and this is the operation which, since its first adoption, has, with some few exceptions, been the practice of my colleagues and myself, and I venture to belive, with very satisfactory results,

It is, as you know, a modification of the Italian operation; but I need not detain you by describing it, as it is almost certainly theoretically known to all, and practically to many of you. Sir Henry Thompson admits the applicablity of it, especially to children, though I do not gather from his observations that he recommends it in preference to the lateral even in them; for he says, p. 69 in his work on Lithotomy and Lithotrity, published in 1863, " the lateral is generally, and no doubt correctly held to maintain its superiority, as a rule, over other methods." Though, in speaking of it in children, he says that the deep incision in the urethra and prostate should be made with cleanness and decision, and with sufficient freedom to admit the tip of the operator's index-finger with tolerable ease; otherwise he may drive the neck of the bladder along the staff, or slide the finger into the cellular interval between the bladder and rectum. This, at least shows how much care is requisite even in the, lateral operation in children, and brings to my mind what before appeared to me one of the chief difficulties and sources of anxiety in the median operation in young subjects. Let each one of us be careful how he exult in his own success, for difficulties and *contretemps* occur to all, and do not necessarily imply want of skill. Again, the surgeon may have a long career of success, and yet by one or two subsequent misadventures reduce his previously large percentage of successful cases to the average, or below the average, of the good fortune of others. I have seen a similar accident, against which Sir Henry Thompson warns us, occur in the median operation, in which the urethra was so much torn as to preclude the possibility of passing the finger into the bladder, and in which the patient died without the removal of the stone. Mr. Maundet, of the London Hospital, has described in the *Medical Times and Gazette*, (No. 972, p. 167) the case of a child in which this same accident occured, with failure in the extraction of the stone, and which also resulted in death. I have made a copy of this case, and shall be glad to read it if required, and I think that its public narration redounds to his honor and credit.

These two cases show the importance of a sufficiently free and clean incision of the urethra in both operations, as the like accident may occur in either; and here I may enforce, *en passant*, the necessity of being sure of the entrance of the finger into the urethra before any attempt at dilatation of the prostate be employed in the median method. In Mr. Maunder's case, just alluded to, the difficulty he encountered was in passing the finger between the upper surface of the probe used and the under and grooved surface of the staff, in attempting which the prostate and neck of the bladder slipped away in front of his finger; and he therefore suggests the use of a grooved director instead of the probe, with a view to incising the prostatic urethra if the resistance at that point be great. Now this is not precisely Allarton's mode of operation; for he recommends the withdrawal of the staff after the introduction of the long probe, and before the introduction of the finger.

The practice which my colleagues and I have generally followed has been not to withdraw the staff until the bladder has been entered by the finger; though I have done this in one case, trusting to the probe alone as a director, because I had great difficulty in inserting my finger without the removal of the staff, and I have seen my colleague, Mr. Marriott, adopt the same plan. I have generally, however, found the staff a most useful director to my finger, and I consider that it, in addition to the finger, forms an admirable dilator of the prostate. Indeed this is the plan which Manzoni, of Verona, adopted; but he gives this necessary caution—viz, not to pass the finger into the prostatic urethra under the staff, but on the patient's right side of it. Now this plan I have always followed, rather indeed curving my forefinger towards the upper surface of the staff, and I am convinced of its importance.

I will now describe the chief structures divided in the two operations.

In the lateral: the skin and superficial fascia; the transversus perinæl muscle and transverse perineal artery; the deep perineal fascia; membranous urethra and its muscular surroundings; very probably the artery of the bulb; a part of the prostate gland with its urethra; and frequently the acelerator arine muscle covering the bulb, and a portion of the levator ani.

In the median. the skin; the superficial and deep fascia; the membranous portion of the urethra and muscular fibres surrounding it, but not of necessity the prostate gland, the avoidance of which, according to Mr. Allarton, is one of the chief advantages of the median over the lateral operation.

I consider that the division of the fewer and less-important structures renders the median operation worthy the consideration of surgeons. The largest stone that I remember to have seen extracted by this method, without any breaking by the forceps, weighed an ounce and a half avoirdupois; and I have removed several of nearly the same size successfully. If the stone were very large and the prostate unyielding, I should not hesitate to incise it, to extend the incision in the deep fascia, and to crush with lithotrite, although I should incline in such cases rather to the adoption of the lateral operation.

(To be continued.)

ON A CASE OF FRACTURE OF SKULL, FOLLOWED BY PULSATING FLUID TUMOR OF SCALP, AND ESCAPE OF CEREBRO-SPINAL FLUID.

By J. Warrington Haward, F.R.C.S.

The following case occurred in the practice of Mr. W. H. Gardner, of Gloucester-terrace, through whose kindness I saw it.

W. G——, a child nineteen months old, healthy and intelligent. fell head-foremost through a skylight on to a wooden floor, a distance of fifteen feet below, where he was found a few minutes afterwards in an insensible condition. He remained quite insensible for about twenty minutes, and then gradually began to show signs of consciousness, but was drowsy and inactive for the next twenty-four hours, after which he regained his usual condition of intelligence and activity. There was no bleeding from the ear or nose, nor vomiting, nor did the parents at first detect any injury of the head besides a slight bruise over the right temple. After about an hour, however, they observed a swelling over the right eyebrow and the portion of forehead above it, which after a few hours had elapsed, had extended upwards to the extent of three inches, and which continued steadily to increase in prominence. After four or five days the corresponding upper eyelid became swollen, and at the end of a week the palpebral conjuctiva became everted by the distension of the lid, so that the eye could not be seen. No hæmorrhage or swelling was observed beneath the ocular conjunctiva. The swelling day by day became more tense and transparent, but the child did not seem to suffer much pain. He frequently rubbed the side of his head and mastoid region with his hand, and was at times unusually fretful; but took his food well, played with his toys, and seemed in otherwise good health.

The parents, in addition to the history given above, informed me that he had been in much the same condition up to the time that I first saw him, which was on Sept. 5th, six weeks after the accident, when his condition was as follows: He is a well-nourished child, not rickety, rather pale and with a head rather large posteriorly. He is as intelligent and active as other children of the same age, but rather fretful. Over the right brow, and the forehead above it, is a transparent fluid swelling, which is about an inch in height, of the width of the orbital arch, and extending from the brow tó the position of the coronal suture. This swelling is tense and fluctuating, and, on gently keeping the hand on it, can be felt to pulsate distinctly. When examined against a light (after the manner of a hydrocele of the scrotum), its contents appeared to be entirely fluid. It cannot be perceptibly reduced by pressure, the attempt causing, however, some discomfort to the child; and it is decidedly rendered more tense when the child cries. The swelling extends downwards from the brow into the upper eyelid, which is very tense, and the palpebral conjunctiva is a good deal averted on to the face; the eye cannot be seen. On pressing steadily with the fingers upon the tumor, a sensation is obtained as of an edge of bone near its outer margin over the brow; but the tumor is so tense that no bone can be distinctly felt beneath it. The tongue is clean, skin cool, temperature normal, pulse normal, and bowels regular. There has been no convulsion nor sickness.

The child had been seen a short time previously (in consultation with Mr. Gardner) by Mr. Barnard Holt, who thought it probable that there had been a separation of the temporo-parietal suture with laceration of the dura mater, permitting the escape of cerebro-spinal fluid, and (from the distinctness of the pulsation) probably also of a portion of brain. He advised slight pressure to be kept up on the tumor to prevent further escape of the contents of the skull, hoping that by the deposit of fresh bone the tumor might be eventually cut off from the cavity of the skull. This pressure was not, however, persevered with after a ew days, as it seemed to give the child pain.

From this time the child gradually began to lose ground: it ceased to walk, became very fretful, and its appetite failed; it seemed also to have more pain about the tumor. I saw it several times in the course of the next three weeks, during which the tumor increased slightly in area, and became, if possible, rather more tense. I advised nothing to be done, unless more urgent symptoms arose. During the following week, however, the child became decidedly worse, was very restless, occasionally rigid, and seemed to suffer pain in the head. Absence from town prevented my seeing it again; but, from the description of the parents, its condition was evidently becoming daily worse. On the 2d October, Mr. Holt was again asked to see the child; and from the extremely tense state of the tumor, the thin condition of the integuments, and evident irritation of the brain, he thought it advisable to puncture the tumor. This he did with a very fine trocar, and drew off eight ounces of clear fluid. The tumor then collapsed, which rendered evident the fracture of the frontal bone described below. The puncture was closed at once, and the tumor rapidly refilled, the condition of the child remaining much the same until Oct 10th, when it had some twitchings of the limbs of the left side. On the morning of this day the conjunctiva gave way, and a large quantity of clear fluid continually drained away, so that sponges had constantly to be applied; and the parents stated that they were sure more than a pint of fluid escaped in the twenty-four hours.

Oct. 11th.—There were frequent convulsive movements of the left side. The child constantly whines, and refuses food; is feverish.

12th.—Frequent convulsive movements, always confined to the left side. A large quantity of clear fluid continues to escape from beneath the eyelid. During the night he became drowsy, and could with difficulty be roused; and gradually sank into a state of insensibility; this continued till death, which occurred on the 13th. During the last two days the tumor had decreased considerably, and the fractured bone could be felt.

Hearing of the child's death, I with some difficulty obtained the parents' permission to examine the injury of the head externally, but was not allowed to open the head or examine the rest of the body.

Autopsy (*Oct.* 17*th*).—There is fracture of the frontal bone on the right side, a portion above the frontal eminence, about the size of a crown-piece, being driven inwards to nearly the thickness of the bone. The arch of the orbit was fractured, and the external angular process driven outwards with its corresponding portion of orbital plate and superciliary ridge, so that the handle of a scalpel was easily passed into the substance of the brain, through the fracture and torn membranes. The bone was bared of its pericranium over all the depressed part, which was that where the tumor had presented; and here the scalp had been raised from the bone by the escaped fluid, and formed a loose bag. There was a very small quantity of pus about the site of fracture of the orbital arch. The depression of the superior part of the bone prevented the possibility of replacing the orbital part, which it kept separated as by a wedge. There was a small loose fragment on the inner side of the orbital fracture. External appearance of child otherwise healthy.

The case presents several points of interest. It adds another to those rare cases, in which there has been an escape of cerebro-spinal fluid from the vault of the skull; but I am not aware of any case in which this fluid formed a pulsating tumor under the scalp. By the accident, the child was rendered in somewhat the same condition as if it had had an ordinary meningocele, but with of course the addition of the injury to the bone; but it is probable, I suppose, that if the child had lived the tumor would have been cut off from the cavity of the skull by the union of the fracture, and thus have been reduced to an inocuous cyst of the scalp. It is to be regretted that, from the objections of the parents, the condition of the brain could not be ascertained; but the history of the case certainly points to a merely expectant treatment. It is remarkable, however, that the convulsions of the last few days of life were all confined to the left side, so that they could hardly have been directly due to the escape of the cerebro-spinal fluid, but were, I suppose, more probably the result of some irritation from the fractured bone, which the escape of this fluid allowed to come in contact with the brain. But considering the length of time since the accident, during which there had been no head symptoms, and the complications of the case, operative interference could hardly, I think, have been recommended.

Queen Anne-street, July, 1869.

ON A NEW SYSTEM OF ABSCESS DRAINAGE BY SPIRAL WIRE TUBES.

By Robert Ellis, Esq.,

Obsteric Surgeon to the Chelsea, Brompton, and Belgrave Dispensaries.

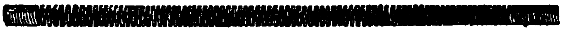
So many years have passed since I first began to use the wire tubes which I propose to describe in this article, that it scarcely occurred to me to publish any account of them, until, on recently showing their excellent performance to several high surgical authorities, I was urged to make them more generally known.

It is about eight years since a lady applied for relief for great pain and tenderness over the pubes and the hypogastrium generally. Her febrile condition, loaded tongue, and cachectic aspect led me to suspect, in connexion with these symptoms, the existence of some collection of pus in or near the uterus; and on vaginal examination, I found this organ distended with fluid, and the cervix absolutely impervious. Fixing the cervix I passed a long trocar throughout its length, and gave exit to nearly half a pint of horribly fetid pus. But since this condition of things could not be allowed to repeat itself, it then occurred to me that if I could devise some very flexible tube the sides of which could not be compressed so as to make it impervious, and if it could be retained in the cervical canal, good service would be thereby rendered. My first attempt was with tubes of caoutchouc; but these were quite useless, for the least angular bend stopped them up, and their elastic walls yielded at once to a very slight pressure from without. I then tried a tube made of soft tinfoil; but in the tubular form this metal became quite rigid, and, if bent, the tube were as apt to become closed up as the others. The idea then occurred to me to make a tube of very fine hard brass wire, by coiling it regulary and evenly over a fine steel rod. The tube was readily made, and its success was perfect. It was elastic in the highest degree; it could even be tied into a knot without destroying its patulousness; its flexibility would follow the wanderings of any sinus, however crooked; and its sides, being slightly open, permitted the secretions of the cavity it penetrated, and the canal in which it lay, readily to pass through. I procured several of these, of different lengths and sizes, and, fitting one of them to the artificial canal made in the cervix uteri, I had the satisfaction of seeing it day by day drain the diseased uterine cavity of its pus; and in a very little time the patient made an excellent recovery, and has since continued perfectly well.

The success of this system of drainage led me to apply the same tubes to a variety of other cases; and I hope shortly to publish some account of their remarkable value, especially in cases of dysmenorrhœa arising from mechanical obstruction of the cervical canal. I have also successfully used them, in some displacements of the uterus, for rectifying the bent state of the cervix which frequently accompanies these malpositions; and in a very opposite class of cases to those of the dysmenorrhœal type—viz., the menorrhagic,—in which they have done valuable service in affording a safe and certain outlet for intra-uterine injections. It is to the approval of Mr. Paget of the application of these tubes to the drainage of deep chronic abscesses generally that the idea of submitting them to the readers of The Lancet is chiefly due.

These tubes, as I have mentioned, consist simply of a closely wound coil of wire, and resemble exactly the springs used by dentists for supporting artificial teeth, or those used by bell-hangers to preserve the due tension of their wires. They are simply spiral springs made of brass or copper wire, of different degrees of tenuity and elasticity. In obstetrical practice I employ only the very fine hard brass wire, the finest I can procure; for I find it makes the best tubes for my special purposes. But for ordinary abscesses in other regions of the body very fine copper wire may be used; it is softer, and exerts very little strain on the tender structure through which it has to pass. It is also finer than the other, and thus can be adapted to long, narrow sinuses, to every bend of which the tube will easily accommodate itself. It is a mere superstition that the copper or the brass do any mischief as metallic substances to the canal in which they lie, or constitutionally. I have used hundreds of these tubes without the smallest evidence of harm due to the metals of which they are composed. But, if it be thought desirable, they may be electro-gilded in a few minutes by plunging them in a hot solution of cyanide of gold, with the aid of a battery and a piece of gold foil.

The manufacture of the tubes is thus managed, and its extreme simplicity ought to enable every surgeon to make them without recourse to the instrument maker. I have always made my own, and thus exactly adapted them to the peculiarities of the individual case. If the surgeon possess a common lathe, they may be made, literally, in a minute. But they can also be made by hand, only they are less even and neat in appearance. I take (for the lathe) a number of common knitting needles of different sizes, cut off the required length, square one end of each after tempering it down in the flame of a candle, and "centre" the other. This forms the tool, or "maundrill," on which the wire is to be coiled. Being fixed in a chuck at one end, and adapted to the lathe-centre point at the other, it is ready for work. The wire is fastened to a pin in the chuck, and the lathe is put in motion: the slow motion is used. The wire, being firmly held in the hand, is drawn by the revolution of the axis upon itself, and thus coils itself automatically, and by a very few revolutions of the wheel the tube is finished. When made by "hand," the steel rod must be firmly fixed at one end of the vice, and the wire then slowly and carefully wound over it to the desired length. Very good tubes can be made in this way, though it is inferior to the other. By a strong pair of scissors or a wire nipper, the tubes can be cut to any size. In order to make them very flexible, it is better to draw them out a little at each end; the spirals are thus slightly separated from each other, and the walls of the tube by this means readily permit the percolation of pus or other fluids to go on through their sides. Care must be taken to bend in slightly the termimal coil of the tube, so that the point of the wire may not catch in the tissues through which it is passed.



Their method of application is as follows:—For the uterine cervical canal it is necessary to fix the cervix by a tenaculum and gently to pass up the tube mounted on a uterine sound; the free end then lies in the upper part of the vagina. It is useful to slip a morsel of vulcanised tube over this free extremity, so as to prevent its abrasing the posterior vaginal wall. For an ordinary abscess they may be introduced on a probe or director, and often without any such assistance, by a spiral, coaxing sort of motion. They are retained easily *in situ* by tying a piece of silk over the free end, and fastening this to the skin by a strip of adhesive plaster. A loose soft pad of cotton wool should then be found to do its work with the greatest regularity until the abscess ceases to secrete any more pus.

As in the tracheotomy tubes, it is convenient to have a double tube in many cases, the inner one being a size or two smaller than the outer. This may be withdrawn and cleansed, and then replaced. They will require changing generally about once a fortnight, but I have seen no harm arise from a much longer stay.

I do not propose to encumber the pages of THE LANCET with a recital of the many cases in which I have found these tubes render invaluable service. I believe the drainage system here introduced to be so simple and practical that no surgeon who once takes to its employment will be disappointed with the results; but if there be any point requiring further explanation, I should be happy to give it to any medical man who may wish for it. The following note of M. Paget's will probably induce some of my professional brethren to give this plan of drainage a fair trial.

"Dear Mr. Ellis,—I have now used your spiral-wire drainage-tubes in cases sufficient to prove to me that they have these following advantages over any other means of drainage that I have yet seen:—

"They can be placed in sinuses of very small diameter, and with equal advantage whether the sinus have one or more openings.

"Their bore is not diminished by bending them to any angle.

"They cannot be flattened or shut up by contraction of the orifice of the sinus.

"They can be inserted with very great facility and can be worn for any length of time, in fit cases, without causing irritation.

"They are cleanly, and excite no decomposition in pus or other fluids." Sincerely yours,

"JAMES PAGET."

It may be convenient that I should add that the tubes may be procured, of various sizes and lengths, from Messrs. Mayer and Meltzer, of Great Portland-street, W.

Sloane-street, July, 1869.

CASE OF INTESTINAL OBSTRUCTION LASTING FORTY-SIX DAYS.

By HENRY M. MADGE, M.D.

Mrs. L——, aged twenty-eight, married, and had two children. Belonged to a healthy family, and until lately had good health. Was a teetotaler, and for some time had been remarkable for being a large eater, particularly of animal food. Her youngest child was born on February 27th, 1867. When six months advanced in her last pregnancy, she had an attack of diarrhœa, and subsequently began to suffer from constipation. About six weeks after her confinement, finding the constipation rather troublesome, going sometimes a week without proper relief, she became an out-patient at the Middlesex Hospital, and attended for three months. Not deriving much benefit, she wentt o the Homœopathic Hospital in Great Ormond Street. After being under homœopathic treatment for several weeks she gave it up as useless.* During all this time the general health was not very much affected, and she was able to attend to all her household and other duties. Towards the end of August, 1867, she passed several days beyond the time usually occupied by her constipated periods, and became very ill, with sickness, fever, rapid pulse, coated tongue, and great abdominal pain and distension. Several means were employed to overcome the obstruction, and on the twelfth day the bowels were relieved, apparently from the use of enemata of various kinds, and large doses of calomel frequently repeated. For two or three days the bowels were relaxed, and were relieved of an immense accumulation of fæces. All the flatulent distension disappeared, and the abdomen passed to the opposite condition of extreme flatness and emptiness. There was no tenderness anywhere on pressure. All the fever and other unfavorable symptoms gradually left her, and the bowels began to act regularly once a day. The patient soon regained strength, and was able to get about as usual, which she did for nearly a month. It was found, however, that she was constantly obliged to take aperients, and she was cautioned against the consequences of not doing so. Partly from neglecting this precaution, and partly, I believe, from some irregularities in diet, she again fell into her previous condition of constipation and attendant symptoms. This time, however, the attack lasting longer, many of the symptoms,—the pain, sickness, prostration, &c.—were aggravated. The obstruction gave way on the fourteenth day, apparently from the use of warm-water enemata, and frequent small doses of sulphate of magnesia. She again made a rapid recovery,—indeed, more rapid than before, and was able once more to get about for several weeks, when, unfortunately, after neglecting the state of the bowels, all the old symptoms returned. I did not see her until the sixth day of the obstruction, when the fever, sickness, &c., were just beginning to show themselves.

---

* The leading feature of this treatment appeared to be warm water enemata.

The friends, with the view, as they said, of obtaining more permanent relief for the patient, now determined on getting her admitted into the Middlesex Hospital. She remained in the hospital ten days The measures that were employed, however, failed to overcome the obstruction. She left the hospital abruptly on hearing, or fancying she heard, something about an operation to be performed on her. As the patient and her friends were disposed to regard the case as hopeless, several days elapsed before I was sent for. I found her in a very exhausted state, and in extreme pain, from the almost constant violent twistings and contortions of the intestines above the seat of obstruction. The colon was enormously distended, and its rolling movements were distinctly, marked out on the surface of the abdomen. Opium and pressure considerably relieved some of the symptoms—the intestinal movements, also the pain and restlessness. In other respects, the patient got gradually worse.

About the thirty-sixth day of the obstruction, the wasting of body and distension of belly were very great. Measurement at umbilicus, 38 inches; pulse 120, and very feeble; features pinched and care-worn; intellect clear; tongue deep red, but moist; urine scanty and high-colored; skin moist and cool; sickness frequent, but there has been no appearance of fæcal matter; stomach rejects everything in the shape of nourishment; supported chiefly by beef-tea enemata. The chances of prolonging life by means of an operation were fairly and frequently placed before the patient and her friends. The suggestion, however, was always met with by firm opposition.

She died on December 31st, the obstruction having lasted forty-six days.

Mr. Newton saw the case with me on several occasions, and assisted in directing the treatment.

Post-mortem examination twenty hours after death.—Only a partial examination was allowed. The body generally was greatly emaciated, and of a dusky-yellowish hue. Measurement of abdomen at umbilicus, 40 inches. On opening the abdominal cavity, the distended intestines started out, and seemed like a series of large bladders. Their coats were highly vascular, but everywhere free from lymph or adhesions. The seat of obstruction was found to be at the upper part of the sigmoid flexure, the portion of intestine immediately above being so immensely distended with soft fæces as to hang over, and almost fill up the pelvic cavity. A ligature was placed above and below the seat of stricture, and the part removed. On examining the preparation, it was found that the stricture was due to the cicatrisation of a former ulcer of the mucous membrane—an opinion confirmed by another gentleman, a much better authority than myself.

Remarks.—The few remarks that I shall venture to make on this case will be—1st. That the history of the case, particularly the sickness coming on late in each attack, and at no time with fæcal matter, and the early distension of the colon, indicated all along that the seat of obstruction was low down in the intestinal canal—that is, in or about the sigmoid flexure. This was readily diagnosed during life, and it was on this diagnosis that the recommendation of Amussat's operation of opening the colon was founded. 2d. That, as other means failed, all that could be done was to adopt Dr. Brinton's plan of giving opium, and lengthening out life by every possible means, in the hope that the obstruction would give way.

Fitzroy-square, June, 1869.

REMARKS ON A PAPER ENTITLED "THE FORCE OF THE HEART, EFFECTIVE AND ABSOLUTE," BY PROF. BUCHANAN.

By Charles Brooke, M.A., F.R.S., F.R.S.E.

The author remarks that the force of the heart has been variously estimated at from 180,000 pounds to five ounces, and that these discordant estimates have brought discredit on mathematical reasoning. This discredit must, however, attach not to mathematical reasoning, but to those by whom it is misapplied: the rule of three, for example, will never be discredited by any amount of blundering answers.

There are two distinct mechanical questions relating to the action of the heart which have, probably, been more or less mixed up by most writers on the subject, not excluding the author above mentioned. One of these (the subject of the above paper), the pressure exercised by the contracting walls of the heart on the contained blood, is a purely statistical question, capable of estimation in units of *pressure*, or pounds weight. The other, the amount of work done by the heart during each systole, is a dynamical question, and can be estimated only in units of *work*, or foot-pounds.* This latter problem is one of considerable interest, but of much greater difficulty and has not, as far as the writer is aware, been hitherto attempted.

---

* A foot-pound is the amount of energy required to r i one pound through the space of one foot.

The ideas which the author associates with the terms "absolute" and "effective" forces are by no means obvious; nor is the matter much elucidated by the remark that "the distinction between them is the same as that which is familiar in mechanical science between the weight to be raised and the power which raises it," inasmuch as there is no "mechanical" difference between the weights in equilibrium on any simple machine, except in magnitude. The application of the term "power" to one of these is a fertile source of erroneous ideas.

The only intelligible sense that can be assigned to these terms in relation to the heart is, that the absolute force is the sum of the forces of the individual fibres; while the effective force is the sum of the resolved portions of those forces which conspire to produce the contraction of the organ. It is obvious that the latter alone is suceptible of definite measurement.

The author has introduced considerations of velocity and resistance, which are wholly foreign to the problem proposed to be solved; and in particular, the introduction into his numerical results of a quantity representing the depths of a vessel, from an orifice in the bottom of which fluid would flow *into a vacuum* with a velocity of 10 in. per second (the assumed velocity of the blood), is purely gratuitous.

The question at issue, although fruitlessly complicated by the author, is really a very simple one. If a vessel be attached to the lower end of a vertical tube, and both filled with fluid, then, according to a well-known hydrostatic law, the pressure against the internal surface of the vessel will be the weight of a column of the fluid of which the height is that of the fluid in the tube, and the base an area equal to that of the internal surface of the vessel. If these data can be estimated with sufficient accuracy in man, a reliable result may be immediately obtained; and the following means are suggested for arriving at data required.

The author infers the height of a column of fluid sustained by the pressure of the blood in a large artery in man, from the results obtained by Hales in the horse, sheep, and dog, but without assigning any reason for the particular number he has assumed: this height may, however, be obtained in suitable cases by direct experiment.

Let a bit of a thin vulcanised sheet of caoutchouc be tied over the mouth of a small glass funnel, and this connected by a flexible tube with a long vertical glass tube. If the mouth of the funnel be placed over any superficially projecting aneurism (the more superficial the better), the convex surface of the aneurism will bulge inwards the membrane; but if a column of water equivalent to the internal pressure in the sac be poured into the tube, a compression of the aneurism will be maintained, which may be observed through the side of the funnel, by the elastic membrane being kept flat, or slightly convex.

The required superficial area of the ventricle may be thus obtained: Let a cast of its cavity be taken in plaster of Paris; then take a slip of gummed paper one inch broad, and say 18 inches long; cover the surface of the cast accurately with pieces cut from this paper, moistened, and struck on. Then the difference between the whole length and that of the remainder will give the number of square inches of surface required.

The product thus obtained will obviously represent the initial force only; but it being the result of experiment that the hæmastatic column remains nearly constant, it is presumable that the diminished force, as contraction progresses, is nearly proportional to the diminshed surface on which it acts, and thus the effective force would be maintained nearly equal during the systole.

The author does not appear to fully appreciate the mechanism of the capillaries. He says that, "in many of them not more than a single blood-corpuscle can pass at a time." It has been with the writer the result of frequent microscopic examination, that in each species of animals the normal diameter of the capillaries is *invariable* and is such that the corpuscles can just pass easily in single file. The obvious scope of this arrangement is to prevent the jamming which a small increase of diameter would permit.

Fitzroy-square, June, 1869.

CASE OF SPINAL APOPLEXY.

By Robert Jackson, M.D.,

Surgeon to the Notting-Hill Dispensary, etc.

On Sunday, the 2d May, 1869, Miss E. L——, a bright, merry, healthy, and well-developed young lady, aged fourteen, arose as usual, but while dressing said that her "fingers felt weak." She, however, went to church both morning and evening, and seemed quite well.

On Monday she again got up as usual, but complained of the same "weak feeling" in her hands. Otherwise she felt very well; participated in the usual studies of the day; and in the evening had a warm bath, enjoyed it, and got into it "with the use of all her limbs."

On Tuesday she was much the same: Ate a good breakfast, feeding herself, &c. During the forenoon, however, the weak feeling considerably increased, and I was sent for. I found her lying on her back in bed, quite merry, laughing, free from all pain, and rather amused than otherwise at her condition. She was, however, unable to shake hands with me, or to move her arms except at the wrists; and failed altogether to pick up a pin placed on a book before her.

On Wednesday there was no very material alteration. I observed, however, that the intercostal muscles were not acting quite freely; she seemed, too, to lie *heavier* in her bed, and she evidently was more unable to turn herself round. There was also a moist crepitant râle over all the chest, with a little cough. The secretions continued free, and pulse regular; and she ate, being fed, a good dinner of roast beef.

On Thursday Sir William Jenner kindly saw her with me. Her general condition was not greatly altered; every sensation perfect; no anæsthesia; and she displayed her usual quick perception and intelligence. A careful examination, however, at this time clearly demonstrated a great and decided loss of power in all the voluntary muscles of respiration, and in those muscles of the arms, back, and chest, supplied by the branches of the cervical nerves. The disphragm, too, was becoming fixed, and there was slight lividity about the cheeks, with a fall in the natural temperature.

From these symptoms it became evident there was some serious spinal lesion, implicating probably, and more particiuliarly, the anterior branches of the cervical nerves and the origin of the phrenics.

Sir W. Jenner, therefore, diagnosed, and, as will be seen, with perfect accuracy, a clot in the cervical portion of the spinal cord, and he prognosed, notwithstanding the bright eye and still merry laugh, a speedy and fatal result. This took place thirty hours afterwards, without pain, without loss of consciousness or sensation, but only as the cessation of the power of respiration became more and more determined, with a desire to be raised "higher and higher."

In this interesting case a post-mortem examination of the brain and spine was kindly allowed, and made forty hours after death. There was slight opacity of the dura mater in several places. Brain congested and soft. A softened spot and ill-defined clot in the cerebellum. The whole cervical portion of the spine, but particularly anteriorly and to the left side, was imbedded in an oblong clot of dark venous blood outside the membranes. The whole length of the cervical portion of the canal and dura mater were deeply tinged by the color of the clot. The cervical nerves all passed through this effused blood, the intervertebral canals on both sides being filled with it. So soon as the seventh cervical vertebra was reached the clot ceased, and the cord and canal assumed their normal condition and color. There was also a good deal of semi-clotted blood about the pons, and the nerves arising from it.

It is certainly a matter of much difficulty to account satisfactorily for this great effusion of venous blood in a subject so young, and so apparently healthy and robust. No outward cause could be assigned; there had been no blow or injury, no illness, no interrupted function; but living with kind and affectionate relatives, she enjoyed every comfort and happiness. It might have been assumed that so great a lesion, situated in so important and vital a position, would have given rise to more decided and graver symptoms from the beginning. The only probable explanation is, that the effusion took place very gradually, had room to extend itself, and coagulated slowly and imperfectly. Until the paralysis of the diaphragm, showing dangerous interference with the functions of the phrenic nerves, nearly every symptom might have been attributed to one or other of those obscure forms of hysteria so frequently met with in practice.

Notting-hill-square, Notting-hill, June, 1869.

SUCCESSFUL TREATMENT OF FEMORAL HERNIA IN THE MALE SUBJECT.

By Augustus Brown, M. D.

As femoral hernia in the male subject is of rare occurrence, I venture to forward the notes of a cace which lately came under my treament, and which I am happy to say terminated favorably.

A gentleman aged sixty-one years was obliged to return home from his business on Saturday, Feb. 13th, 1969, owing to a most distressing attack of sickness, which was produced by the descent of and strangulation of a femoral hernia in the left groin. The sickness continued from Saturday morning till Monday evening (the time of operation). The patient sent for me on Sunday evening. Feeling, however, very tired, and believing from the nature of the message that he was suffering from a billious attack, I prescribed effervescing of potash draughts, with dilute hydrocyanic acid, and promised to call on Monday morning. Thus a delay arose, which might have been of serious consequence to my patient, and which clearly proves how little we can rely upon our notions of what a case may be.

On Monday I found I had a serious case to treat. On examining the abdomen, I detected the hernia. In cases of obstinate sickness this should always be done. The vomited matter was now stercoraceous. I had some little difficulty in determining what kind of hernia I had to treat. After, however, a careful examination of the parts, I came to the conclusion that it was femoral. Being about the size of a pigeon's egg, it had escaped through the saphenic opening, and then turned sharply upwards. Failing to reduce it, I sent for my friend Dr. Walker, of the Essex-road, who, after a careful examination, formed the same opinion as myself, and attempted the reduction of the bowel, but without success. Owing to pressure of business on the part of my friend, I was obliged to delay the operation for a few hours, and by the time I could gather the necessary assistance daylight had gone, consequently I was obliged to operate by candle-light. Chloroform having been administered by Mr. New, the taxis was then again attempted, but failed. I then cut down upon and carefully exposed the sac. The hernia had passed out of the saphenic opening, and then taken a sharp turn upwards, and was resting on the lower part of the abdominal parietes. As my patient was not young, I desired to avoid, if possible, opening the sac. To afford room for the reduction of the bowel, I divided the anterior part of the crescentic arch of the saphenic opening, and then, passing my finger as far as Gimbernat's ligament, I divided a few of its fibres. Having thus far cleared the way, I examined the parts, and still found reduction impossible. This obstruction to reduction consisted in constriction and adhesion of the parts round the neck of the sac, and rendered the division of the fibres round the neck, also the opening of the sac, a matter of necessity. On opening the sac, the bowel, which was dark and congested, and which had exidently been long enough in its prison-house, was easily returned. The edges of the wound were closed with silk sutures, and the wound was subsequently dressed with the dry dressings, which I have long used in all wounds.

My patient, who was a good subject for operation, would have made a rapid recovery but for two circumstances. He very foolishly got out of bed two hours after the operation to relieve the bowels, which acted freely; this act nearly broke open the wound. He suffered also from a troublesome cough, which produced a considerable impulse towards the wound and kept the parts from healing. With the aid of a well-fitting truss he has again returned to business.

In conclusion, I take this opportunity to thank Dr. Walker for his kind assistance and advice in the case; for it is no small comfort to have at one's hand such able and experienced assistance.

Belihta-villas, Barnsbury-park, Islington, July. 1869.

ON A CASE OF EMPROSTHOTONOS, RESULTING APPARENTLY FROM COLD, SUCCESSFULLY TREATED BY THE SUBCUTANEOUS INJECTION OF THE SOLUTION OF THE EXTRACT OF THE CALABAR BEAN.

By Bernard Duffy, M. D. F R.C.S.I.

Mr. J. L. T——, from thirty-five to forty years of age, of spare habit of body, leading a temperate but rather sedentary life, being in Florence on the 17th and 18th of April, when a sharp northerly wind was blowing from the heights of the surrounding Appenines, still covered with snow, and labouring under a cold caught in England some three weeks before, omitted the precaution of wearing an overcoat whilst lounging about the narrow and sunless streets, numerous in the older quarters of the capital of Italy. About midnight on the 19th Mr. T—— was seized with sudden spasmodic pain at the lower part of the sternum, shooting backwards, and followed soon after by complete rigidity of the intercostal muscles, so that he felt as if his body were locked in a vice.

I saw him at about half-past eight on the morning of the 20th. He was sitting on the side of his bed, his head and chest so rigidly bent forwards as to prevent his assuming the erect position, his countenance indicative of extreme distress and anxiety, and the respiration short, frequent, and what the French call *saccadé*. On percussing the chest, a tolerably clear sound was emitted, but auscultation showed that little or no air entered the smaller air-cells of the lungs. The heart's action was hurried, but regular, and free from signs indicating organic lesion. Pulse from 90 to 96. On applying the hand to the chest, the intercostal muscles were found permanently contracted into *hard* lumps, also the recti abdominis, thereby greatly increasing the emprosthotonos, the tendinous intersections being quite evident, while the external oblique was as flat and as hard as a deal board; what respiration there was seemed to be carried on exclusively by the diaphragm. A warm bath was ordered, and while it was being got ready mustard sinapisms were applied to the insteps, a draught of camphor julep with mindererus spirit and chlorodyne was given, and a camphor linament with chloroform and atropia rubbed into the chest.

These remedial measures, including the bath, affording but trifling and temporary relief, and the patient beginning to complain of stiffness about the neck with some difficulty in swallowing, though the frontal facial and masseter muscles were yet free, I resolved to lose no further time; and believing that I had to deal with a case of tetanus produced by cold affecting the afferent nerves, and giving rise to exaggeration of the reflex motor function of the spinal centre, I injected, right side, one-third of a grain of the extract of about noon, under the skin of the neck on the Calabar bean dissolved in eighteen minims of water, as recommended by Mr. Thos. R. Fraser, Assistant Professor of Materia Medica at the University of Edinburgh; the solution being previously neutralized with a solution of the carbonate of soda. This injection was repeated every three hours on that day; and nausea, but no other apparent result, supervening after the fourth dose, the injections were suspended for the night, and until the following morning at nine o'clock, from which time they were used steadily every second hour. Nausea, faintness, and perspiration coming on after the fourth dose, they were discontinued; an evident impression having been made by this time on the muscles engaged. After this the tetanic symptoms gradually yielded, so that on the night of the sixth day the patient was enabled, for the first time since the attack, to resume the recumbent position without an aggravation of the spasms.

Purgatives and enemata were administered without effect until the 21st, when the bowels acted freely, with great relief to the patient. On the 22d two blisters, each about ten inches long and over an inch wide, were raised, by means of Messrs. Bullen and Burt's blistering fluid, on either side of the dorsal spinous processes.

On the 21st, about midday, the exhaustion was alarming, and then the patient was seen, in consultation with me, by Signor Burci, the late able Professor of Clinical Surgery at the hospital of Santa Maria Nuova, in this city; and, owing to the rarity of the case, and as a further example of the beneficial result of the use of Calabar bean, he suggested that it should be recorded.

Florence, May, 1869.

A CASE OF ENCYSTED ABDOMINAL TUMOR.

SPONTANEOUS RECOVERY.

By E. F. Fussel, M.B., M.C.R.P.,

Physician to the Royal Dispensary.

In a large number of abdominal tumors it is universally acknowledged that their true nature can only be determined by such precise tests as the knife of the surgeon, the successful efforts of nature to rid herself of that which is hurtful, or the evidence which a post-mortem reveals to the researches of the pathologist. The following case affords a remarkable example of the fact, that if these tumors be a stumbling-block to the ordinary physician, they are sometimes no less puzzling to those who have made them their especial study.

Mrs. P——, aged forty-two, married, with two children, consulted me in the early part of 1868 for a swelling at the upper part of the right iliac fossa. It was painless, about the size of an orange, and presented in its general features much the aspect of an hydatid or ovarian tumour. Catamenia irregular. Nothing abnormal could be felt per vaginam. In the course of six months it gradually increased, without any active symptoms, until it became as large as a child's head; it was much less defined, and less globular, than it was at first; rather tense; not absolutely dull to percussion. No fluctuation, and no solid body could be detected. Uterus not enlarged.

She consulted a physician at Weston-super-Mare; and on her return the tumor had increased in size, and began to cause her much uneasiness. She said she was to go into the London Hospital to be operated upon. To this I demurred, and requested a consultation with an authority in town, who pronounced it a "ventral hernia" and she was directed to wear a graduated air compress. A few days afterwards a red spot appeared on the surface of the tumor and in the course of a week she wrote—"The boil has broken, a quantity of yellowish-looking water has come away, and the swelling has vanished." To tactile examination there was only a fullness, and on her standing up but a slight bulging. From the minute opening I obtained a teaspoonful of thin sero-purulent fluid, which under the microscope exhibited some blood and pus-corpuscles, but nothing else noteworthy. She subsequently saw a distinguished obstetrician in Edinburgh, who spoke of an injection, but afterwards determined to leave it alone. There was a slight oozing for several months. There is now a puckered cicatrix, and for a few inches in its neighborhood the integuments feel thickened and hard. She has miscarried lately, but is at the present time (June, 1869) quite well.

What was the nature of this tumor? Besides the two diseases above mentioned, it presented characters common to several others in its position, growth, dimensions, and phenomena discoverable prior to its bursting—e. g., psoas abscess, pelvic abscess, colloid cysts. Of the second of these a case is mentioned by Dr M'Clintock, in in which the swelling must have equalled, if not exceeded, that which I describe. Cystic disease of the kidney sometimes forms a tumor in front of the intestines, entirely confounding the diagnosis; and the urine may be normal if the diseased kidney ceased to secrete, and if the other is healthy. Colloid cysts may contain fluid of the utmost diversity in thickness, and be mistaken for ovarian tumors. Dr. Crawford has published a case of spontaneous cure of an ovarian cyst by the discharge of its contents through the abdominal wall. But of all the outlets by which ovarian tumors sometimes empty themselves, the external abdominal issue is, according to most authors, less often followed by a cure than when they escape by other channels. I am not even now prepared to state acurately the precise origin of the formation of the cystic tumor that I have related. It may have been an ovarian cyst which inflamed and suppurated, or a chronic abscess altogether confined to the abdominal parietes.

Brighton, June, 1869.

* * *

A REMARKABLE CASE OF COMPLETE LOSS OF HAIR ALL OVER THE HEAD AND BODY FROM CEREBRAL INJURY.

By R. Cooper Todd, Esq., Staff-Surgeon.

In the summer of 1863, I was called to see a gentleman, aged about forty-five, at an hotel at Bray, Ireland, who had been thrown from the side of an Irish car upon his head, and received a partial concussion of the brain. Immediately after the accident he was quite master of himself, and able to continue his journey, until he reached the hotel, which was about four miles from the site of the accident. When I saw him, he was slightly confused in mind, but perfectly able to answer questions, and conscious of the passing events. By my advice he remained that night in the hotel, but the next morning, before I had time to visit him, he had left the hotel, and returned to his home in Dublin, a distance of quite twelve miles, which he accomplished by rail and by cabs. In the course of the following day, and for a few days after, some alarming symptoms supervened. Hemiplegic convulsions of an epilepetiform character came on, accompanied by total unconsciousness; but the fits were of short duration, and in the interim the patient was collected. There was, however, present at times a peculiar kind of delirium, like that common in some low fevers. The patient rose from bed, seemed anxious to hide away and lock up in his chest of drawers trifling articles, such as a grape or two, and on one occasion he tried hard to throw himself out of his window; but at the same time, when addressed, he was quite amenable to government, and recognized those about him. In a short time he quite recovered, and in less than six weeks after the accident managed successfully some very important private business. However, in the course of time, he suffered from occasional headaches, and sought medical advice, I think, in Scotland. He underwent a course of mercury, and subsequently took daily, for about twelve months, thirty grains of bromide of potassium, when he found that one morning, on proceeding to shave, he had no beard to cut; and subsequently all his hair fell off, not only from his head and face, but from his chest and body,—and up to this time he had been always a very hirsute man.

This peculiar result of the accident was brought to my notice only the other day by the gentleman himself. At first I was disposed to regard the depilation as the consequence of the long-continued use of the bromide of potassium. However, my friend Dr. H. Massy, staff assistant-surgeon, pointed out to me the record of a case alluded to by Mr. Holmes in his System of Surgery, vol. i., article Accidents from Lightning, which, as far as the depilation goes, was identical with the case I record. Both cases were injuries of the head. In the latter instance the falling off of the hair began the day after the accident, but in my case about twelve months intervened. In the accident from lightning, also, the toe-nails fell off eventually, which has not yet happened to my friend, who up to the present is in capital health, although quite denuded of every hair upon him. In the former case no blame can be attached to the bromide of potassium, because it was not administered or even known, and consequently it is equally likely that in my case the falling off of the hair was solely due to the cerebral injury, and in no way to the treatment.

Netley, July 5th, 1869.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum. tum proprias collectas habere, et inter se comparare.
> —MORGAGNI *De Sed. et Caus. Morb.*, lib., iv. Prœmium.

LONDON HOSPITAL.

DISEASES OF THE GENITO-URINARY ORGAN.

(Under the care of Mr. Maunder.)

FOUR interesting cases of the above class of diseases have lately been submitted to operation by Mr. Maunder.

CASE 1. *Intractable stricture.*—For years this patient, forty five years of age, had been the subject of stricture situated near the bulb. Catheterism, rapid dilitation, and internal incision, culminating in the possibility to pass a No. 9 catheter, failed to give relief to the man, who had a frequent desire to micturate, and then passed urine only in drops or in a small stream. Perineal section was now performed, with perfect relief to the symptoms, and the urine flows freely (fifth day from operation) partly by the wound and partly by the meatus.

In commenting on the case, Mr. Maunder said that a very large majority of strictures could be sufficiently relieved by the simple use of the catheter or bougie, and consequently any means which involved a breach of surface was unjustifiable, unless in exceptional cases.

CASE 2. *Stricture; complete retention.*—This man, sixty years of age, had suffered from stricture for many years, and from complete retention or forty-eight hours, having walked twelve miles, to the hospital. Croton oil, a warm bath, and theterism by the house-surgeon, failed to afford relief. When seen on June the 13th, by Mr. Maunder, the bladder was distended above the level of the umbilicus, and the patient was in great pain, and a good deal exhausted, with a dry tongue. The bladder was at once tapped, per rectum, with immediate and marked relief of suffering, and about four pints of urine, of offensive odor, and containing some muco-pus, were removed in the following day the man, though weak, was very pleased with his condition.

CASE 3. *Calculus in the urethra.*—A child, about two years of age, was admitted June 13th, with retention of urine, which had existed thirty hours. A calculus, impacted in the urethra opposite the root of the scrotum, was removed with some difficulty with a small scoop, and the retention relieved.

CASE 4. *Calculus vesicæ.*—A very feeble man-aged sixty-eight, had suffered from symptoms of stone during the last two years. He was extremely exhausted, micturating every ten minutes, his urine being loaded with muco-pus, and ammoniacal. He was ordered benzoic acid, and on the 12th inst., having rested in bed four days, Mr. Maunder performed lithotrity under chloroform. After this the symptoms were somewhat less severe. On the 14th the operation was repeated, and the stone thoroughly broken up, a fair quantity having come away after the first sitting.

With Weiss's new instrument lithotrity certainly is a most elegant operation, and if carefully performed entails in its application comparatively little risk. In the foregoing case the operator never failed to catch a fragment of the stone, and after neither sitting was the urine stained by a single drop of blood. At the time of operation Mr. Maunder explained the two methods of useing the lithotrite, perferring that of Civiale as being likely to do less injury to the bladder than that of Brodie, in which latter, of necessity, the blades of the instrument come in contact with that viscus.

One hundred and fifty grains of benzoic acid administered over a period of seventy-two hours, had removed the ammoniacal odor, and rendered the urine acid.

◆

WEST LONDON HOSPITAL, HAMMERSMITH.

OBSTRUCTION OF THE BOWELS OWING TO SCIRRHUS OF COLON; DEATH.

(Under the care of Dr. Simms.)

THE diagnosis here was from the first that the patient was afflicted with cancer, firstly, because of the asthma with which the illness began, there being no history of such attacks previously, either in the patient's own case or in his family and no evidence of heart or lung disease. The asthma, moreover, ceased entirely when the more serious mischief set in. Both lumbar regions were tender to the touch, and dull; but beyond this there was no indication whatever as to the seat of mischief. Amussat's operation was not tried, although it might have given a few hours, relief, if successful, in a case in which the stricture was so far distant from the anus. The two operations discussed were—puncture of the colon, which, by letting out fæcal matter into the peritoneal cavity, would have been fatal; and an exploratory operation, which was not attempted as the only warrant for it was the pain complained of in the umbilical region, where the patient believed the obstruction to be. A feature worthy of remark is that the stercoraceous vomiting, at one time so free as to lead to the suspicion of a communication between the colon and the stomach, was almost entirely arrested, and completely kept under, by subcutaneous injections, at first of morphia and atropia, and afterwards of morphia alone. Neither the direct nor interrupted galvanic current availed, although a small passage was left; but their use increased the pains and tormina very much.

Mr. W. P. Adams, house-surgeon, has furnished us with the notes.

R. C——, aged forty, shoemaker, a thin man, with a sallow but not cancerous complexion, was admitted on March 23d, with obstructions of the bowels. He had always had good health till three months since, when he had an attack of asthma. On March 16th, he was seized with sudden pain in the abdomen; the bowels had been relieved once on that day. He applied at the hospital, and was ordered a calomel-and-opium pill, which gave him no relief. He was accordingly attended at his own home by the house-surgeon, and was treated with purgative medicines and enemata, which failed to relieve him; and, as he was getting worse, he was admitted into hospital. He had some stercoraceous vomiting two days previous to his admission. States that he has always been very regular in his bowels, but three months ago he had an attack of constipation, which yielded to a few doses of purgative medicine. Admits having drunk rather freely in early life. No history of cancer in his family.

Condition on admission — Has passed nothing by the bowels for a week. Pulse 84; tongue clean. Has vomited some fæcal matter this morning; the abdomen is distended; superficial veins enlarged; outline of stomach, which is distended, well defined; abdomen tympanitic in iliac and umbilical regions; marked tenderness on pressure in left lumbar region: slight dulness in both flanks. Principal pain referred to umbilical region. No hernia to be detected in any of the usual situations; the rectum is quite clear and free from disease. No albumen in urine, which is of usual quantity, and passed without difficulty. Gums slightly ulcerated, and bluish, but without a defined line.

March 23d. — An enema of one pint of warm olive oil was given with a long tube passed up the rectum about six inches; it was not retained and brought away nothing with it. To have one grain of extract of opium every six hours, and an enema of warm soap-and-water to be given night and morning.

24th. — Pulse 108; tongue clean. Vomited a large quantity of fæcal matter. Nothing has passed; abdominal distension increased. Five grains of calomel at night.

28th. — Passed some small balls of hardened fæces, after enema this evening; not in much pain.

29th.—Pain very great. Pulse 108. Has vomited a great deal of fæcal matter.

30th.—Vomited more fæces. Complains very much of the feeling of distension. Omit the opium pill. Abdomen to be rubbed night and morning with a liniment composed of equal parts of belladonna liniment and chloroform liniment. To have five minims of tincture of belladonna every four hours.

31st—Sickness still continues. Pulse 108; tongue clean. Nothing has passed. Tincture of belladonna to be increased to ten minims every four hours.

April 1st.—Fæcal vomiting still occurs frequently, especially after taking any food. Some more hardened fæces came away with the soap-and-water enema this morning.

3rd.—In great pain. Is vomiting large quantities of fæcal matter. Abdomen tympanitic; some slight fluctuation; pulse 108. To discontinue the liniment, and also the tincture of belladonna. To have a subcutaneous injection of atropine solution, with a quarter of a grain of hydrochlorate of morphia, every six hours.

4th.—Passed a good night. No sickness all day. Pulse 92.

7th.—Has been tolerably free from pain since last note, and has had no sickness; but nothing has passed the bowels. To have ten grains of calomel, three minims of croton oil, one grain of extract of opium, and five grains of the compound extract of colocynth, to be made into three pills, one to be taken every four hours.

10th.—Pulse 100, weak. Patient begins to look very worn, and is getting much emaciated. No sickness. Had an enema this evening of warm soap-and-water while in a warm bath, which brought away a small quantity of liquid fæces. Has a subcutaneous injection whenever he is in very great pain.

13th.—Vomiting has returned. To have bismuth, five grains, and compound tragacanth powder, ten grains, in half a teacupful of beef-tea, every six hours. The subcutaneous injection to contain half a grain of hydrochlorate of morphia. Chloroform liniment to be rubbed into abdomen night and morning.

16th.—A little liquid fæces has come away today, and on the two preceding days. Pulse 96. No sickness. Galvanism applied to abdomen with a magneto-electric machine. Abdominal distension increases very much.

17th.—Much the same. An enema was given him this evening while in a warm bath. The tube was passed up fourteen inches. A few hardened lumps came away.

20th.—General condition the same. Pulse 80, feeble. To have the following mixture: iodide of potassium, ten grains, and an ounce of decoction of bark, twice a day. An enema of an ounce of castor oil and a pint of oatmeal was given him today, and a little hardened fæces came away with it.

24th.—Nothing has passed since the 21st, when some liquid fæces came away after an enema and warm bath. Patient seems very weak after the bath. Slept better last night. Had a subcutaneous injection of morphia, half a grain. Has been having morphia by the mouth since the 18th. The relief afforded by the subcutaneous injections is much greater than that by the morphia draughts. Mr. Teevan examined the patient today with a view to some operative interference, but was unable to localise the seat of obstruction, and decided to wait. He suggested that half-drachm doses of tincture of nux vomica should be added to the iodide of potassium and bark mixture, and that galvanism should be applied with a Stohrer's battery.

26th.—Patient weaker. Pulse 80, feeble. Galvanised him to-day, a tube connected with the battery being inserted in the rectum. Patient said that he could "feel the current working inside" him. It gave him great pain.

28th.—Abdominal distension very great. Pulse 80; tongue clean; no sickness; complains greatly of flatulence. Galvanised him again to-day. Says he cannot bear the pain caused by it. Is now having a grain of hydrochlorate of morphia injected subcutaneously, as any less quantity gives no relief. Generally has two injections in the twenty-four hours. A consultation was held today to consider the propriety of some operation being performed, and it was decided not to interfered.

29th.—Patient has slept but little. Says he feels lulled after the subcutaneous injections, though they do not make him sleep much now. Has passed about a teacupful of liquid fæces this morning. Has had an assafœtida enema to-day

He gradually sank, and died on May 2d.

Examination forty-nine hours after death.—

On opening the abdomen a small quantity of serous fluid escaped. The whole of the intesttines, both large and small, were enormously distended with liquid fæces, and in many places there were deposits of lymph upon them, matting them together. The rectum was quite clear, and free from any disease; but in the descending colon, at a distance of sixteen inches from the anus, was an indurated ring of cancerous tissue, springing from the coats of the bowel, and almost occluding it. A small passage, about the size of a goose-quill, was left. The intestines above the point of obstruction were very much distended, but all below it were much contracted and empty. The lumbar and mesenteric glands were enlarged; liver small, and somewhat atrophied; stomach empty and contracted; thoracic viscera healthy.

KING'S COLLEGE HOSPITAL.

A CASE OF RELAPSING TYPHOID FEVER.

(Under the care of Dr. Duffin.)

The following case is intended to illustrate the difficulties occasionally attendant on the diagnosis of typhoid fever.

C. W——, a young woman nineteen years of age, suffered from slight rigors and vertigo on the 25th or 26th of April of the present year. General slight muscular prostration, headache, thirst, anorexia, and indifferent nights' rest followed upon this, and persisted until her admission into the hospital eight or nine days later (May 4th, 1869). When first seen, she presented a bright uniform erythema, extending over the face, chest, and abdomen, but not involving the extremities. The throat was florid, with slight enlargement of the tonsils; but there was no trace of pultaceous deposits on any part of the fauces. The glands at the angle of the jaw were moderately enlarged. The tongue was dry and furred, the papillæ being very distinct. She presented a heavy suffused aspect, and her intelligence was decidedly obscured, so that her antecedents could not be relied upon. She, however, seemed ignorant of the existence of any rash. The pulse was 130, the temperature 104 4-5° Fahr., and the urine contained about one-sixth of albumen. The case, then, had a most deceptive resemblance to scarlatina. The coincidence of so high a temperature, albuminuria, and marked cerebral symptoms, with an imperfect rash, seemed to justify even a certain amount of apprehension. Nevertheless, if the preliminary history could be depended upon, it differed in many respects from that usually pertaining to scarlatina. The extremely uniform, smooth character of the rash also suggested hesitation in diagnosis. During the following four days this rash gradually faded, but the pulse and temperature kept up, the latter with morning remissions of about 1½° Fahr. The cerebral condition remained unaltered; ever night she had delirium, and during the day remained in a torpid, lethargic state.

On the 8th of May (twelfth day of disease), in spite of the persistence of these symptoms, the albuminuria was found reduced to a trance, and distinct general cutaneous desquamation was in progress. A careful examination of the functions of the thoracic and abdominal viscera revealing nothing beyond a little rhonchus at the base of the chest, and there being no trace of diphtheria, a careful search was made for typhoid spots, but without success. This search was subsequently repeated daily, and with the greatest possible care; but no rose-colored spots were found from this date onwards. There was also a total absence of diarrhœa abdominal tenderness, or tympanitis—indeed, some constipation had to be overcome. As days passed on, the nocturnal delirium, the day drowsiness, and other cerebral signs gradually faded. The descent of the temperature line was similarly gradual. Morning remissions continued; and the average evening exacerbation decreased till a standard, a degree above the normal, was attained on the twenty-second day of the disease. The temperature trace thus obtained constituted a very valuable testimony as to the nature of the illness. Nevertheless, a perfectly normal level was not reached: and, after five days of an uncertain state, the evening limit was observed to touch 100½° F. The same occurred on the ensuing evening, and by the next morning the thermometer gave us 104 2-5 F. Simultaneously with this, the pulse shot up first to 120, then to 160. The former suffused, heavy look returned. She complained of intense headache, was very restless, and had some vomiting. The skin was for the second time covered with a deep erythematous blush, which again spared the extremities. This time there was an absence of sore-throat. The tongue at once became brown and dry, with vividly red edges. The urine contained no albumen. After forty-eight hours the rash had vanished; but the high rate of pulse and temperature, the dry tongue, vomiting, delirium, and restlessness continued. To these, wakefulness and general hyperæsthesia were added. After this state of things had lasted for five days—i. e., on the twenty-seventh day of disease—the albuminuria recurred. The lungs began to fill with loose râles, and the pulse to fail in power. She died on the fortieth day of illness—the twelfth from the relapse. During the last seven days of illness the average temperature was 105° F., the day and night variations not exceeding a degree.

On a post-mortem examination, numerous ulcers were found in the lower portion of the ileum. Some of these ulcers were free, and looked healthy; others were covered with yellow sloughs, for the most part on the point of separating. Nowhere was there any tendency to peforation. The spleen was large, weighing twelve ounces. The liver was very fatty. The kidneys were healthy. The lungs were generally œdematous, and one contained a small kernal of imperfect pneumonia. No other morbid change worth noticing was observed.

Dr. Duffin remarks, — This case, then, was one of relapsing tyhoid, but with an absence of almost all the great characters which usually indicate this disease. Accepting the data given by the patient, there can be no question as to the total absence of rose spots, at least from the twelfth onwards. The care also with which the skin was examined on admission renders it very doubtful if any existed at that date. The absence throught of diarrhœa, abdominal tenderness tympanitis, and gurgling in the iliac fossa is especially remarkable in such a conjuncture.

The presence of a deep erythematous blush over the face and trunk, both during the initial and during the relapse, is also unusual. Being coupled at the outset with some slight sore-throat and glandular enlargement, and associated with such exceptionally severe nervous and thermomeric signs for so early a period in typhoid fever, it was natuaral to suspect the presence of scarlatina, the more so as dceided desqumaticn followed. Still the appearence of an erythematous blush in early typhoid is not uncommon but that most men have observed it. Dr. Duffin has also on one other occasion seen the co-existence of sore-throat and erythematous rash; but in that instance,*as the erythema fell, rose-colored spots appeared. The return of the erythema with the relapse, and the absence of sore-throat on that occasion, quite preclude the idea of the co-existence of scarlatina and typhoid. Of the signs of positive diagnostic value, the thermometer seems to have supplied the best evidence; the gradual descent of the daily maximum from the eleventh to the twenty-second day of illness was especially striking. In itself, however, it would not suffice to make the diagnosis, since Wunderlich, in his work on Temperature, has figured an almost similar curve as occuring between the same dates in a case of severe scarlet fever (fig. 34, taf. v.) The morning remissions, although, on the whole, of value, were not sufficiently steady to justify any inference. The antecedents probably deserved more attention than they received on admission. The insidious, gradual approach' and the number of days occupied, especially claimed attention. The patient's mental state was, however, such as to throw a haze over all the information with which she supplied us.

◆

POPLAR HOSPITAL.

CASE OF ARACHNITIS FOLLOWING A FALL ON THE HEAD TREPHINING ; DEATH.

(Under the care of Dr. Bain.)

The notes of the following interesting case have peen supplied to us by Mr. Oliver Penfold, resident surgeon.

G. C——, aged thirty-four, a shipwright, admitted April 2nd, 1869, for symptoms of brain-compression. On the 13th March last, at 11.30 p.m, he was found in Cornhill, London, lying on his face, his head in the gutter, and his feet towards the middle of the road. He had been drinking, and it was supposed that he had run after an omnibus, which was full, and therefore did not stop when he hailed it; that he had stumpled, and had struck his head against the curbstone. He was insensible, and had a cut on the left side of the head. A policeman took him at once to Guy's Hospital, where the wound was dressed; and in about an hour and a half he recovered his senses sufficiently to give his correct name and address. He was sent home in a cab. Two days afterwards he was seen by a surgeon, and was attended by him until the day of his admission. During that time he had been allowed milk and light puddings' bur no stimulants. He kept his bed all the time, and the cut scalp seemed to be healing well till about the 26th or 27th March, when (his wife said) "it looked shiney, and not so red as it had done." On march the 27th he did not recognise properly his friends; On the 28th he had a cold shiver, was restless, and kept getting in and out of bed.

When admitted (twenty days after the injury), he had a granulating wound of scalp, about the middle of the coronal suture on the left side; and at the bottom a small fissure of the parietal bone about inch long wasfound. He was lethargic, but could be aroused sufficiently to get him to put out his tongue. There was no paralysis ot sensationor of motion in the limbs. He was able to retain his urine and fæces, but for convenience thecatheter was used. He was placed in bed upon a water-pillow. Beef-tea and milk diet. Ice was applied to the head, which had been already shaved; and four grains of calomel were given internally.

April 3rd (twenty-first day).—Passed a restless night; complained of pain in his head. Puts his hand to his head, and moans frequently. Is very thirsty; breath "sour"; tongue dry, white, and furred; bowels confined; sensation and motion not impaired; left pupil larger than right. Lies on his right side. Pulse, morning 72, evening 95; temperature, evening, 105·25° F.

4th (twenty-second day).—Restless; still thirsty; is lethargic; pupils equal; bowels acted, the motions having a most offensive odor, and being of a light-yellow color. (Calomel given). Pulse, morning 70, evening 74; respiration 28; temperature, morning 105°, evening 104°. To take an ounce of brandy every two hours.

5th (twenty-third day).—Quiet; there is a little epiphora; no closure of the right eyelid is produced by touching the right eyeball, which is glazed over; the legs move when the soles are tickled; temperature 102·25° morning and evening; pulse 82 morning and evening; tongue white furred; a little purging; involuntarily passes his urine. A grain of calomel to be given every six hours.

6th (twenty-fourth day).—Quiet, but talkative; no pain; sighs frequently; talks nonsense; recognized his wife to-day; the right eyebrow does not move when the left does; no purging; tongue white, furred; pulse, morning 85, evening 88; temperature, morning 104·75°, evening 104·25°.

7th (twenty-fifth day).—Quiet; answers questions fairly; is talkative; left conjunctiva is now anæsthetic; can only half-close his eyelids; says he can hear the ticking of a watch placed close to either ear; there are a few pustules, about as large as a split pea, on the penis and right buttock; abdomen tympanitic; tongue white, furred, dry; reflex movements are diminished, but not lost, in left foot. About midnight he seemed comatose and in a dying state. Dr. Bain and Mr. Corner saw the patient together; and Dr. Bain, thinking that the symptoms probably were due to the pressure near the scalp wound, trephined a portion of the skull, about as large as a shilling, at the situation of the fissure in the coronal suture. No pus was found. The dura mater was then opened, but nothing abnormal was seen, except that the cerebral veins were highly congested. Pulse, morning 97, evening 98; temperature, morning and evening, 102·75°. To take half the quantity of brandy-and-egg mixture (half an ounce), and one grain of calomel to be given every six hours.

8th (twenty-sixth day).—Wandering in ideas;

still can half-close his eyelids; sensation diminished on both sides of cheek, and there is a decided weakness of the right facial muscles. Pupils equal, dilated, and fixed; abdomen tympanitic; tongue white, furred, and moist. Pustules on penis and buttock becoming confluent. He constantly moves his hands (the right chiefly) about, plucking at objects in front of him. Up till to-day he had been lying upon his right side: but he now lies on his back. Pulse, morning 80, evening 97; temperature, morning 101·33°, evening 101°.

9th (twenty-seventh day).—Had slight convulsions, chiefly of the arms, at 4, 6, and 8 A. M. Moves his arms and right leg well. The left leg is not easily made to move by tickling the sole. He mutters constantly, and waves his hands slowly about in the air as if trying to feel something. Pupils dilated. Pulse, morning 96; temperature, morning 100·75°.—1.30 P. M.: Pupils half contracted; breath stertorous; moribund.—Died at 6,30 P. M.

Dissection.—Lips, scalp, and right ear blue; left ear anæmic. Black fluid blood escaped from the cut surfaces of the scalp; the latter was very readily removed from the calvaria. No fissure nor fracture was detected before the pericranium was removed. After it was peeled off, a small fissure, about half an inch long, was seen in the lower and hinder part of the trephine hole in the left parietal bone; the rest of the fissured bone had been removed by the trephine. No fracture was discovered. There was no extravasation of blood between the dura mater and brain. Small detached collections of thick creamy pus were scattered over the outer surface of the brain, chiefly along the superior longitudinal sinus, and between the convolutions. The creamy matter could be dissected from the subjacent pia mater, which was congested. The opposed surfaces of the cerebrum were glued together by recent lymph, but were readily separated. Brain-substance firm outside. The lateral ventricles were full of sero-purulent fluid. Corpora striata were a little softer than normal, as was the rest of the cerebral substance at the base of the brain, over which a thin layer of creamy pus was found between the arachnoid and pia mater. The sheaths of the optic nerves, and the three divisions of the fifth pair, were surrounded likewise by viscid matter. The thoracic and abdominal viscera were not examined.

METROPOLITAN FREE HOSPITAL.

CONSTANT VOMITING AND ERUCTATIONS RELIEVED AT ONCE, AND PERMANENTLY, BY SULPHUROUS ACID.

(Under the care of Dr. CHAS. R. DRYSDALE.)

MRS. C——, aged thirty six, seen first on May 25th, 1869. She has been suffering for the last month from vomiting of all her meals and constant eructations. The eructations are incessant, and during the time the patient was in the consulting room they occured every minute or two. She brought up a good deal of frothy and sour clear fluid. To take a bismuth and hydrocyanic acid draught three times daily.

June 8th.—No better. Ordered an effervescing draught thrice daily.

15th.—No better; eructations as before, and continued vomiting of all her meals. Half a drachm of sulphurous acid in one ounce of water three times a day.

29th.—The patient says that she is now quite well, and that after taking the last medicine for a day, the vomiting and eructations ceased.

July 6th.—She has continued free from vomiting since.

Provincial Hospital Reports.

ROYAL SURREY COUNTY HOSPITAL.

A CASE OF ANEURISM OF POPLITEAL CURED BY MEANS OF SIGNORINI'S TOURNIQUET AFTER FLEXION HAD FAILED.

(Under the care of Mr. EAGER.)

THE chief points of interest in this case are, that, flexion did not cure the aneurism, it produced, by means of the strap causing compression upon the femoral, a certain amount of collateral circulation; that, when the tourniquet was applied, the pain was not very severe; that the patient could bear it very well, and with the opium at night had a moderate amount of sleep; and that the partial stoppage of circulation through the femoral caused no œdema of the leg. Mr. Thomas F. Hopgood, house-surgeon, has obliged us with the notes-

James R——, aged thirty-three, was admitted April 10th, 1868, suffering from aneurism of the popliteal artery. Patient says he was in very good health up to about six months ago, when he first noticed a swelling about the size of half an egg, his attention being called to it by great pain in the leg. This got gradually worse, until about two weeks before admission. The only thing he can recollect was, that some time before he found the swelling he had a blow in the bend of the knee, but says he felt nothing of it at the time. Upon examination, his heart, lungs, and kidneys were found to be quite healthy.

Mr. Eager attended him a short time before admission, and found, upon examination, that the limb below the knee was much tumefied, and the superficial vein much enlarged,—a tumor in popliteal space, large and pulsating strongly, with a considerable amount of œdema around it. The only treatment use before admission was rest, the leg being elevated and evenly bandaged.

Upon admission, the swelling of the leg was nearly gone. He was placed in bed, kept on very low diet, and had flexion of the leg with pad in popliteal space. This gave rise to considerable pain, and he was unable to bear it very tight. The manner in which flexion was produced was by means of a strap, which controlled the femoral artery to a certain degree. This was continued till June, the tumor up to May having become less, but far from being cured.

June 27th.—He began to take acetate of lead, one grain, twice a day, which was gradually increased to three grains a day, up to July 13th, when, as the lead had affected the system, the blue line being marked along the gums, and the tumor not having diminished in size, he was o r dered to have his medicine stopped, bandages removed, and to try to get the leg straight. Unable to straighten the leg more than at a right angle to the thigh. To take full diet, quinine mixture, tincture of muriate of iron, and have Signorini's tourniquet applied to the femoral artery sufficient to nearly stop the circulation. When the tourniquet was applied sufficiently tight to stop circulation in the sac, there was still distinct pulsation felt in the tibial artery. To take tincture of opium, twenty-five minims, to allay the pain at night.

July 15th.—Tumor smaller, very little pulsation in sac, even when the tourniquet is nearly unscrewed. To continue as before, with opium at night.

18th.—Tumor much harder, and less pulsation when tourniquet is unscrewed.

23rd.—Tourniquet entirely removed. There is no pulsation; the tumor is quite hard. The tourniquet to be still applied.

25th.—Tourniquet to be left off, but to still keep in bed, and continue medicine as before, but to discontinue opium at night.

27th.—Allowed to get up for the first time. Leg unable to be straightened more than at right angles to the thigh. To use crutches, and try to straighten the leg. General health much improved.

30th.—Can now get about very well with crutches. Leg much straighter.

August 23rd.—From July up to this time he has gradually improved, and is now able to get his foot to the ground, and walk with a stick. He left the hospital this day, with tumor much decreased in size, quite hard, with no pulsation in fact cured.

BRISTOL GENERAL HOSPITAL.

INCISED WOUND OVER PATELLA; SYNOVITIS; SUPPURATION; INCISION INTO JOINT; RECOVERY.

(Under the care of Mr. Atchley),

The following case, for notes of which we have to thank Mr. J. B. Withington, is interesting as furnishing evidence of the great value of the free and early incision into a suppurating joint, and may serve to illustrate the importance of diagnosing correctly between disorganization of a joint the result of primary disease of synovial membrane, and disorganization of joint secondary to disease of the osseous structures, upon which to so great an extent the treatment depends.

In the present case, tension and constitutional irritation were relieved, absorption of pus into the system effectually prevented, and the treatment has terminated in the most satisfactory condition of perfect anchylosis in a good and serviceable position.

William M——, cooper, aged seventeen, was admitted on March 6th, for acute synovitis, following a wound done with a drawing knife three days previously. He had applied for relief at the time of the accident; but, although warned of the danger he incurred, he refused to come into the hospital; consequently, the limb was fixed on a straight back splint, and the wound (which did not penetrate the joint) dressed with carbolica oil.

When admitted, there was great swelling and some tenderness around the joint; the wound gaped on the removal of the sutures, but there was very little discharge, and no synovia. The leg was placed in a McIntyre splint, and cold irrigation applied continuously to the knee for forty-eight hours; but as the discharge from the wound increased, and there was no diminution of the heat and swelling, this was discontinued, and poultices applied.

On the 13th, as it was evident there was a great quantity of pus in the joint, Mr. Atchley made a free incision on either side, so that the forefinger could be passed easily through, beneath the patella. The poultices were continued, and he was ordered beef-tea, eggs, milk, and four ounces of wine.—At 9 P. M., his pulse was 120; temperature 101·8°.

14th.—9 P. M.: Pulse 128; temperature 102°.

15th.—10 A. M.: Pulse 120; temperature 100·9°.—1 P. M.: Pulse 133; temperature 102·9°. Ordered quinine and iron, and eight ounces of wine.

17th—10 A. M.: Pulse 140; temperature 101·4° Ordered eight ounces of brandy daily, instead of wine.

18th.—Pulse 128; temperature 100·8°.

19th.—Pulse 120; temperature 99·8°.

20th.—Pulse 100.

From this time he improved continuously, the discharge, at first very profuse, gradually lessened, and his pulse and temperature fell. He has occasionally had an opiate at night, and a purgative when required.

May 9th.—There is still some discharge from the inner opening, and great pain and tenderness *only when moved*; otherwise is very comfortable and improving in health. He has now two ounces of brandy daily, and meat.

He has been kept in the most absolute rest till June 6th, when he was allowed to get up, with a leather splint encasing his knee. He has had no pain for some time past, and the incisions, with the orignal wound, are perfectly healed.

Editorial.

THE EDUCATION OF MEDICAL STUDENTS.

On the present occasion we shall be content to leave personal exhortations to the incipient students of medicine, as to diligence, attention, concentration, and so on, to those gentlemen who are to address them in the introductory lectures of the several schools. We propose to address ourselves rather to the question of the future education of the student, and hope through him to reach the profession at large on the subject of the most vital importance to the well-being of the community, which has, in some quarters at least, already exited considerable attention.

We have before us the Report of the Committee of the General Medical Council on Professional Education, and accompanying which is an Appendix, containing the opinions of a large number o the teachers of the present day. Nothing will b more likely to lead to radical change in the art of teaching than a conviction on the part of those taught that the change ought to be made, and nothing will, we think, influence the student more in arriving at this conclusion than a knowledge of what his teachers think upon the subject. With the view, then, of placing teachers and taught *en rapport*, we propose to devote this article to epitomising as far as possible these statements of the teachers, premising that we shall avoid giving names in order not to create any unpleasant feeling of jealousy between the several schools.

Let us begin, then by discussing the question of Lectures. There is a very wide spread feeling that the student is over-lectured; but few probably will take such a decided stand as a Dublin teacher, who proposes "to abolish all lectures in schools, and to make the ultimate examination the true test of a man's capability." "Lectures," the same teacher remarks, "in the present day, when books can be had on every subject, are simple robbery of the parent through the child, and on these grounds should be abandoned altogether." A more reasonable and true estimate is arrived at by a London teacher, who says: "My belief is that the lecturing system has been carried too far. It was the best mode of teaching, perhaps, thirty or forty years ago, when books were not so available by the student as at present, and when the lecturer from his personal experience could tell more than could be readily found elsewhere. It may be, perhaps, the only practicable way of teaching very large classes in some exceptional cases, where the lecturer possesses unusual power of arresting the student's attention." Another gentleman suggests that "it is quite as necessary to limit the loquacity of the teacher as to compel the attendance of the pupil." But probably a well-known Scottish teacher most completely states the case when he says: "The great fault of many systematic lectures at present is, that they are not sufficiently elementary. Many learned, scientific, and accomplished men get tired of describing, year after year, the first principles or primary facts of their science or art. They forget that their hearers are only beginners; and, instead of adapting their teaching to the comprehension of the learner, they are too fond of assuming that their hearers know more than they really do, and of addressing themselves to the advanced student." The necessity of making lectures, as far as possible, demonstrative is generally conceded, but is hardly acted up to so fully as could be wished. On this point a distinguished lecturer remarks: "The term 'lectures' is hardly correct. A *chemical* lecture should be a *demonstration of facts* by experiments, with such observations as are necessary to make the results intelligible to the minds of beginners."

The advantage of combining oral examinations with lectures is insisted upon by many teachers, and several also hit the great blot of lecturers repeating one another's instructions. Thus *e.g.*: "A good deal of needless over-lapping of courses also often occurs, but ought as far as possible to be guarded against. In a well managed school there should be a *concordat* between the lecturers, defining who is to be really responsible for the teaching of a given subject." Again, it is asked by an Edinburgh professor "whether some check to the frequent repetition of the same subject, could not be devised. I believe the doctrines as to inflammation are repeated in four different courses in the University."

When we turn to the several subjects of the curriculum we find the greatest conflict of opinions as regards the amount of attention to be given to each by the future medical practitioner. The tendency of each lecturer to exalt his own subject is here too often manifest, and especially in the case of those subjects of a scientific rather than a practical character. Thus, taking Chemistry as an example, we find one London teacher enumerating the following as the periods in a four years' course when the subjects could be most profitably studied:—

"*First Winter Session:* Forty lectures (two in each week) on the Inorganic Elements and Compounds, and on the laws of Chemical Action.—*First Summer Session:* Thirty-six laboratory lessons (three in each week) of two hours, on the Identification of the Inorganic Substances connected with Medicine.—*Second Winter Session:* Forty lectures on the Organic Compounds connected with Medicines.—*Second Summer Session:* Thirty-six laboratory lessons of two hours, on the Identification of the Organic Substances connected with Medicine.—*Third Winter Session:* Twenty lectures (one in each week) on the Chemical Operations taking place in the Animal Body.—*Third Summer Session:* Twelve laboratory lessons (one in each week) of two hours, on the Detection of Poisons."

Such a devotion to one subject is manifestly impossible, and the majority of teachers agree in confining the study of it to the first year, though one, we think wisely, asks for a *preliminary* summer session, during which Elementary Physics, Botany, and perhaps Osteology, might be studied. Most of the lecturer on Chemistry appear to be agreed upon the necessity for increasing the *practical* teaching of that science, and this is well put up by one who knows thoroughly the requirements of the profession in toxicology.

"Having regard to the fact that the chemical instruction here described is intended for students of Medicine, to aid them in the future practice of their profession, I think an attendance for ten weeks in the laboratory—three days weekly, and for three hours on each day—would be sufficient. This would make thirty days' attendance in the whole. The student should not be

> wearied with minute details, or with the working of elaborate and refined chemical processes which are not likely to be required in the practice of his profession. He should be made to feel an interest in the performance of his experiments, and that there is a practical object to be obtained by the results. This interest is destroyed when he is made to work for too many days, or too many hours a day."

We—in common, we dare say, with most students—agree with one lecturer in believing that "there is to great a disposition on the part of teachers to go into the refinments of the science, and to occupy much valuable time in the illustration of subjects which have little or no connexion with medicine or medical practice;" and rejoice to hear from another that, in studying Organic Chemistry, it is not necessary to learn "all the details of horable formulæ to be found in the text-books, but a general account of the most important organic substances, their classification, relationship, and metamorphoses."

Passing to another subject, we find the professed **ANATOMISTS** clamoring, like Dr. **PARR**, for "all the sippets." Thus one of these gentlemen says:—

> "When we take into account not only the importance of Anatomy, from its nature and extent, but that the knowledge of it acquired by the student has generally to last him for life, as it is almost the only branch which the practitioner is unable to improve himself in, practically, after he has left the medical school, it is not too much to say that anatomical study should not be allowed to be thrown aside before the end of the third year. I am far from saying that further dissection may not be engaged in with advantage during the fourth year also, if the student can find time for it; for I would hesitate to appear to assign any arbitrary limit to the attention which the student should give to the dissection of the human body."

And another maintains that

> "From the extent of the subject, from the numerous important details which it embraces, from the fact that these can only be acquired when at a medical school, and that constant repetition and observation are necessary in order to implant them firmly in the memory, I hold that the period of anatomical study ought to extend over the first three years of the four years' course."

We should be sorry to be misunderstood as decrying anatomical knowledge, but we would ask if practical utility is not too often sacrificed to useless minutes? We are far from upholding the self-complacent statement of the two anatomical teachers at a large London school, who say: "If we are only left alone, and not troubled with incessant agitation, we can manage, as we now manage, to educate medical students under the existing system as well as under any practicable modification of it:" and believe that in many ways anatomical teaching might be improved—most certainly by abandoning the still almost universal plan of separating muscles, vessels, and nerves into distinct systems, instead of including them in their natural relations. The necessity for the practical study of Anatomy is, we believe, conceded by everybody, and of course by every teacher; and the utility of "demonstrations" is generally admitted. In the opinion of a very able and experienced teacher, however, "anatomical demonstrations should be confined to the dissecting-room, and given to a limited number of students at a time, so as to secure that each one of them sees and examines the dissection show. The conversion of these demonstrations into a winter course of lectures, given in the theatre—that is, a second daily or supplementary course of lectures on Anatomy,—is an unnecessary tax on the students' time and resources;" and in this opinion he is confirmed by another teacher, who has had experience of both methods.

The majority of the teachers of **PHYSIOLOGY** agree in placing this subject in the second rather than in the first year (contrary to the present practice), and in this the scheme already published by the General Medical Council coincides. The subjects of this course are well defined by a London teacher as—

> "Physiology proper, with a general anatomical description of the various organs and textures, including their minute anatomy and development. The functions of a part cannot, I believe, be advantageously studied without an acquaintance with its anatomical construction. (Descriptive anatomy, I take it, is not intended to be included under the head of 'Anatomy and Physiology'—at all events, I am of opinion that it ought to be considered as a subject apart)."

The same lecturer defines the modes of teaching as follows:

> "By illustrative lectures and microscopic demonstrations. The term illustrative, I mean, should include physical and chemico-physiologcal experiments, and likewise such experiments—and there are many upon living animals—as are admissible. I feel strongly that Physiology is becoming more and more a subject admitting of experimental illustrations in teaching, and that a much sounder knowledge is to be given by the introduction of experiments than without them."

A varying amount of stress is laid by different teachers upon the study of Minute Anatomy as a part of Physiology, though all agree as to its necessity. One teacher, whose reputation is based principally upon his microscopic investigations says:—

> "Minute Anatomy ought to be taught practically as well as by lectures. A large room where students can work in connection with the physiological department and study microscopical investigation, is as important as the dissecting-room. It is also most desirable that a good

> physiological laboratory should be attached to every large school. This would entail a considerable expenditure, and the appointment of several demonstrators; but, in my opinion, it is so necessary that the fees paid by the students should be considerably increased, in order that a more thorough system of teaching than is at present possible in most schools might be carried out."

It is not a little curious, however, to find this same gentleman, who is also a clinical teacher, complaining in another part of the Report that some of his students prove to be "ignorant of the general anatomy of the lung;" while others "are ignorant of the anatomy of the lung;" while others "are ignorant of the anatomy of the kidney, and know nothing about the circulation through it." Lastly, in connection with these three elementary subjects, it may be worth while to quote the opinion of one teacher (in which many others coincide) as to the folly of multiplying schools, and thus diminishing power. He says:—

> "Indeed, I have, with others, often thought that the teaching of these subjects, instead of being distributed amongst our several hospitals, might be much more beneficially carried on at some one or two central colleges. I believe that such a plan would afford advantages, resulting from a concentration of force, which would far outweigh any objection to it."

The lectures on Materia Medica and Therapeutics appear to be singularly unanimous in their desire for the separation of the two subjects, and their treatment at different parts of the curriculum. A knowledge of Materia Medica and Pharmacy is required in the first year, though it is not necessary for the pupil to wade through the enormous volumes which have been written upon the subject. As an Irish teacher well puts it:

> "For 'Pass' examinations, mere historical knowledge of medicines, botanical questions, and chemical processes that are not of practical importance, should be altogether eliminated, or restricted to a secondary position; they are better suited for men seeking higher qualifications, honors, &c. Thus no practitioner ever makes, nor need know how to make, calomel, corrosive sublimate, morphia, aconitine, or chloroform; they are invariably prepared by wholesale manufacturers, and it would be as profitable for a student to know how to make coal-gas as to learn such processes as these. Nor does it signify to him where or how scammony, aloes, or gamboge are got. He should be required to recognize these substances, and, when necessary, to identify them by applying simple appropriate tests; he should know their probable adulterations, and how to detect them; he should be familiar with such native plants as belladona, conium, aconite, digitalis, stramonia; and, above all, he requires to understand the probable effects and average doses of these and similar drugs, and how they can be best employed for relieving suffering."

The following expresses the general feeling on the teaching of Therapeutics, and has been adopted in the scheme of study already put forth:—

> "I am decidedly of opinion that Therapeutics should only be taught by men who have personally devoted themselves to original research on the nature of drugs, and who also possess a competent knowledge of modern physiological chemistry; and that their audiences should consist exclusively of students who have passed through every other part of their medical course, including hospital practice, for at least six months on the medical, and six months on the surgical, side. Only such men are fit to hear about the action of drugs; but that they should be allowed to go into the world as practitioners without having had the kind of advanced teaching on this subject to which I have referred is, to my mind, scandalous."

We are glad to notice that more than one teacher calls attention to the fact that, in the present day, "too little attention is paid to teaching the art of extemporaneous prescription," and fully concur in the opinion expressed by an excellent authority, that "Practical Pharmacy is at present most imperfectly taught in the dispensary of an hospital; the dispensing of drugs being usually performed so rapidly and imperfectly as to engender habits of carelessness, and the instruction on Pharmacy practically amounts to nothing."

On the important subjects of MEDICINE AND CLINICAL MEDICINE, and SURGERY AND CLINICAL SURGERY, we have a great variety of opinions; and taking these in their order, we will first quote the estimates of pupils prepared under the present system by three different physicians. One, a teacher in the Army Medical School, who has to do with recently qualified members of the profession, says—

> "I have not failed to observe that some who have passed the various examinations above-named, have derived their knowledge of practical medicine almost entirely from books. They have either had no systematic clinical training, or they have neglected such opportunities as they have had. Such men when placed in charge of the sick are at first quite abroad. They hardly know how to set about a systematic inquiry into the man's condition; they betray their ignorance of the right mode of handling and using the ordinary aids to diagnosis; the records they make of their cases are at first vague; and, missing, as they almost invariably do, the real points on which to seek the true elememts for diagnosis and prognosis, their first efforts at case-taking result in documents of no value to themselves or others. Thus it comes about that the time of teachers in this school is often occupied in teaching elementary matters which ought to have been mastered at an early period. On the other hand, we have men who, having had real bedside teaching are able at once to enter on their duties here; they display familiarity in the use of all the ordinary aids to diagnosis, handle the sick as experts should, and their journals contain valuable records of their observations. Men of this

stamp profit much by their studies here, and are able to turn their minds at once to the careful observation of disease altogether new to them."

Another teacher, in the metropolitan hospital, expresses a desponding "doubt if 30 per cent. of those who obtain the ordinary licences to practise would be able to diagnose an ordinary case of heart, lung, liver, or kidney disease, or to give a fair general account of the diseased organs; and I fear that 50 per cent, or more, would not know how to set to work to investigate a complex case of disease, such as often occurs in actual practice." In direct contrast with this, a third, who is well known as an able teacher, bears the following gratifying testimony to the efficiency of candidates for the higher degrees: —

> "During the period I have been examiner at the University of London, where a practical clinical examination is required, I have been much impressed with the fact that not a single candidate has ever appeared who was not quite *au fait* at the bedside in a thorough investigation of the case of the patient."

The majority of teachers agree in postponing the study of medicine and clinical medicine until the third year, though one well-known physician suggests "that the clinical study of medicine should not be undertaken until the end of the first year of the four years prescribed, but that students may yet advantageously pass some time of the first year, especially after the first winter session, in the out-patient rooms and wards of an hospital, so as to familiarise themselves with the aspects of disease." The difficulty which has been always more or less felt that students are apt to be attracted to the surgical wards, to the neglect of their medical studies, is plainly stated by one lecturer, who says very truly —

> "Students who begin surgical study in their second year, and who get so far interested in it as to continue in the surgical wards of the hospital during the third winter (or perhaps even the third summer), simply cannot possibly learn medicine at the bedside. They cannot possibly have had opportunities for knowing all that is to be learnt by stethescope, microscope, chemical tests, thermometer, sphygmograph, &c. &c., in addition to the ordinary facts of elementary diagnosis. I am satisfied that very many students are thus thrown out of all chance of a proper education in these matters; for these are precisely the points that can only be learnt at the bedside."

Since most people agree nowadays as to the necessity for "clinical teaching," it may be as well to give the definition of it by a professor well able, from his own practice, to form an opinion. "True clinical instruction," he says, "does not consist in giving lectures in a class-room, however able they may be; but in seeing that the students really learn and exercise themselves at the bedside in all that is necessary for rendering themselves efficient practitioners." But as every school, unfortunately, does not possess a special clinical professor, appointed and *paid* (an important element) to instruct the pupils in the wards, and without any systematic course to distract his attention, we think we cannot do better than lay before our readers the methods such a professor pursues with his class: —

> "The professor commences both the winter and summer session with a course of practical instruction on the methods of physical diagnosis. The continued repetition of this course is rendered necessary by the fresh and untrained students coming to him for instruction. Further instruction is given, as cases permit, on the examination of the urine, and on the use of the thermometer, of the laryngoscope, and sphygmograph, &c. The method of instruction which I have subsequently found to work best is twofold. The first consists in the adoption of the plan pursued at some Continental schools, and also at Edinburgh, of calling upon an individual student to examine a case in the presence of the class or of the professor. The professor directs the student's inquiries, pointing out, as they are observed, the leading features of the case and their general significance; but this should, in my opinion, be done as far as possible through the medium of the student who is, for the time being, practically in charge of the case; the information thus imparted being conveyed by means of questions directed personally to him.

The attention of the rest of the class is kept alive by special signs or symptoms being directly demonstrated to some or all of the other students; questions may also be addressed to others than the gentleman examining the case. When his examination is concluded it appears to me advisable that a short clinical lecture should be given by the professor on the spot, dwelling on the salient features of the case, its relation to other cases of the same class, and on any peculiarities requiring diagnosis, or on special circumstances requiring trearment, and to some degree on its pathology and etiology. The students should be encouraged to take notes, both of the phenomena presented by the patient, and of the remarks made by the teacher.

> "The second method is that each student should be encouraged to write at least one report weekly of a case specially alloted to him. The report is expected to be full, from personal observation of the patient, and is to be accompanied by a commentary embracing the diagnosis and the grounds on which it is based, by a short sketch of the pathology and of the prognosis and treatment, together with the reasons for these, including also properly-written prescriptions. For this purpose the students are permitted to attend and examine patients in the wards during the morning, under the general superintendence of the physician's assistant, whose duty it is to see that the patients do not suffer from methods of examination conducted without sufficient experience. The student is allowed to use any books he pleases in the preparation of these reports, in order both to extend his personal observations and

to improve his knowledge and reasoning powers. The reports are handed weekly to the professor, who corrects them and returns them to the students, and, when necessary, points out in the cases themselves errors in observations or diagnosis on the part of the student."

The out-patient department has usually been looked upon as a stepping-stone to the wards, but one London physician proposes—and, as it appears, on good grounds—not to allow attendance in the medical out-patent room until the completion of the third year. The following are the reasons for the proposed change:—

"The forms of disease that present themselves in the out-patient department are not the typical and severe cases met with in the wards; they much more closely resemble the average forms of disease dealt with in private practice. The student should begin his clinical studies with well-marked and clearly-defined cases, which will impress themselves vividly on his memory, and serve as a basis of comparison subsequently. When he has become familiar with the characteristic and prominent symptoms of morbid action, he will be in a position to appreciate the minuter shades of derangement, and the out-patients offer an admirable field for further study. I would make them the bridge by which the chasm now existing between clinical studies in an hospital and private practice shall be crossed. I would require each student, under the supervision of the physician or surgeon, to attend, visit, per scribe for, and takes notes of at least twenty different cases. No visiting should be required, except in those cases which the physician or surgeon wish followed up for the sake of careful observation. While the student would still lean on superior aid, he would be taught careful and independent observation; he would learn the importance of domestic hygiene; he would cease to regard the patient as a mere object of scientific interest, and learn more of the 'humanity' of Medicine."

In considering the subject of Surgery and Clinical Surgery, the moot question at once arises whether first-year's men should or should not attend surgical hospital practice. As we have already seen, many teachers, particularly those engaged in the more abstract sciences, would debar the student from all hospital duties for his first two years. This is not the opinion, however, of some of the most eminent surgeons and teachers of the day; and we shall quote two of these, in the hope that they may induce the young student to lose no opportunity of studying disease. The first, an eminent London teacher, says—

"The surgical practice of an hospital, whether amongst in-patients or out-patients, should be attended every day during the whole term of study, unless when interrupted by dissections that cannot be postponed, or by attendance on medical practice."

The second, a Dublin surgeon—now unfortunately taken from the scene of his labors,—writes—

"The youngest pupil cannot go round any hospital without carrying away some knowledge, or making some observation; his eyes become familiar with the appearances of disease; he can practise his fingers in feeling tissues, fractures, &c. In a large hospital he has opportunities of comparing diseases apparently similar, yet distinct in reality, in different forms of the same disease, at the same time and in the same ward; thus he learns to reason for himself; he can more readily understand all descriptions of books and lectures. Hence he ought to attend hospital practice from the commencement of his studies; or, in the later years, should be obliged to take charge of some cases, write the history and progress, and dress and treat to the termination."

Another teacher uses the fact that the bulk of medical students intend to follow general practice as an argument in favor of the study of surgery in all its minutiæ. He says—

"This fact implies that the majority of their patients in after-life will be suffering from medical complaints, while at the same time they must be prepared at any moment—probably some years after quitting the hospital—to act boldly and skilfully on some critical surgical emergency where delay is impossible and surgical assistance inaccessible. It appears to me essential, then, that every practitioner should have a sound knowledge of practical and operative surgery on starting in life, since his opportunities of gaining this, in the course of his daily routine, are really *nil*."

The advantages of holding surgical clinical appointments are, we think, fully recognised by all teachers; and, in fact, the College of Surgeons of England has already insisted upon some "charge of patients" being undertaken by every candidate for its diploma.

With regard to the systematic course of Lectures on Surgery, the opinion of an advanced thinker on matters medical may be advantageously quoted, since it shows how the surgeons recognise the inconvenience to which attention has been already called—the repetition of lectures on the same subject by several teachers. This gentleman says—

"It has long appeared to me, and my opinion on the point has grown stronger from year to year, that a good deal of time is wasted in our medical schools, and also often much confusion caused, by lecturers on surgery and lecturers on medicine both considering themselves required to teach such general parts of pathology and practice as are common to both branches. Opinions may differ as to the best mode of dealing with this fault. If I were myself organising a medical school, I should prefer that neither 'Surgery and Clinical Surgery' on the one hand, nor 'Medicine and Clinical Medicine' on the other, should include those general parts; but rather that a short separate course, introductory to both branches, should be given on General Pathology and General Therapeutics, and that Surgery and Medicine should include only the matters which are distinctly surgical or medical."

That "systematic" as distinct from "clinical lectures are of use, may, we think, be taken to be generally conceded; but the opinion of one learned professor may perhaps be of weight. He writes:—

> "The general principles both of disease and treatment can, I believe, be taught to most advanvantage in a course of systematic lectures; while the details of special disorders can only be learned by long-continued study, practical as well as theoretical. Such details, being more or less disconnected, may be gained independently of a continuous course of instruction, from clinical lectures, observation of disease in an hospital or elsewheer, and from private reading. Nevertheless, I am satisfied, from experience, that it is a valuable thing for the student to hear even the details of special affection and their treatment systematically discussed. The subject, however, is so extensive that it is impossible to do justice to the whole of it in a single six months' course; and I believe a good arrangement to be to vary the courses in successive years, the general principal being given thoroughly every year in the early part of the course, while special diseases are divided into two groups, each of which is discussed every alternate year."

The necessity for the practice of operating on the dead body being more usually adopted by students, is generally remarked upon; but we believe that no material alteration in this matter will take place until the licensing bodies make operative surgery a part of their examniations. The idea that a sufficiency of material is not procurable we believe to be founded on error, and were the demand regular and continuous, we feel convinced that as good a supply of subjects might be obtained in the summer as in the winter.

Lastly, as regards MIDWIFERY AND DISEAESES OF WOMEN AND CHILDREN, the balance of opinon is unmistakably large, owing principally to the fact that the teachers in the several London Schools met and agreed upon a statement which must necessarily have great weight, and from which we will make two extracts—

> "The Lecturers—considering the great extension which has been made in recent years in the knowledge of obstetrics and diseases of Women and Children; the deep interest of the public in possessing practitioners duly skilled in this department; and that it is of paramount importance to the comfort and success of the young practitioner to possess sound theoretical and clinical training in it—are unanimously of opinion that the actual means of study, and the share devoted to it in the present curriculum, are insufficient."
>
> "The Lecturers are of opinion that the study of the subject of Midwifery and the Diseases of Women and Children should be extended over two courses of lectures; and that these may be most profitably attended during the second and third summer sessions; and, further, that a course of clinical lectures—not less than twenty in number—on the Diseases of Women and Children, should be attended during the third or fourth winter."

No one can, we think, find fault with the conclusion to which experience has led the eminent men in question. That Midwifery, which forms, it may be said, the staple of general practice, should be relegated to a three months' course is absurd, and such a result could only have been brought about by those who had no experience of the practice of the art. The well-being of the community, to say nothing of the daily increasing competition of *accoucheuses*, demands an early alteration in this portion of the curriculum of medical study.

Having thus, as far as our space allows, summarised the opinions of the existing teachers respecting the subjects taught, we will conclude this article with a word to those who are about to enter upon the all-important period of study. Whatever may be the alterations that a few months or years may bring about, the same rule should be the guide of the student —to endeavor to avail himself to the utmost of the opportunities afforded him. It must necessarily happen that all his teachers will not be men endowed with the same powers, and that the teaching of one may commend itself to him much more than that of another. He must bear in mind, however, that students are not, any more than teachers, made all of the same pattern, and that the teaching which he despises may be of the greatest service to his fellow. We believe it to be a matter of very secondary importance at which school a student enters, for at all he will find abundance of opportunity; provided only he will seek it. It should be a daily thought with the student how he may best utilise the hours before him, and he will be happy indeed who at night can look back upon the day well spent. We do not mean that the whole of every day must necessarly be spent in study, nor are we counselling the sacrifice of health at the altar of knowledge; but as idleness is the root of all evil, so we would impress the necessity of diligence upon those who would hereafter occupy honorable positions in an honorable profession.

THE MEDICAL TREATMENT OF INVALID SOLDIERS.

THE recent publication of the Report of the Committee on Courts-Martial has directed attention to a subject which lately called forth some warm animadversions. Now that the ripple of excitement which some weeks since attended the discussion of branding and cupping in the army has passed away, we may advantageously consider the question in its different bearings. The Commissioners have gone to the root of the matter in indicating the connection between these practices and our vicious system of bounty and recruiting. We said long ago, and we venture to reiterate now, that all medical treatment should have one, and only one, object in view—the cure or relief of disease. We could not believe that medical officers were in the habit of cupping men suffering from the evident effects of organic disease for the purpose of marking them, because such a course seemed to us to be as unnecessary as it was barbarous. If, however, any medical officer, as asserted, cupped an emaciated soldier or patient in an advanced stage of consumption, as a matter of routine branding, by all means let that medical officer bear the obloquy which he deserves. If the medical profession cease to be a humane calling, it may as well cease to exist.

Now, as to cross-cupping, of the existence of which in army practice we have never doubted. This method consists in making second incisions at right angles to the first, instead of selecting a fresh place. The idea—a false one—was that more blood could be obtained in this way. Be this as it may, cross-cupping was not, and probably is not now, peculiar to military hospitals. It used to be often practised in civil life, and it is still pursued in the continental armies, where conscription is the rule. In our own army it had been very commonly adopted, where, for obvious reasons, cupping is substituted for leeches.

A reference to books and regulations on recruiting and invaliding will show that from the earliest time, certainly from 1830 up to the present, great stress has been laid upon the significance of all marks of medical treatment. We will confine ourselves to a recent period. The late Lord Herbert, for example, was considered *par excellence*, the soldier's friend; but the medical regulations bearing his signature intimate that these marks are to be held as grounds for rejection of a recruit. Mr. Alexander issues a circular in which he pointed out that most diseases for which soldiers were invalided were, at one time and another, likely to bebenefited by local depletion; and that several young soldiers had been (then) recently discharged without marks of treatment of any kind being present on their persons. Lastly, during the *régime* of the late Sir James Gibson, the inspecting medical officer had to certify that a discharged soldier would not be re-enlisted. The way in which these things dovetailed as it were, into one another is clear. We are simply relating—not defending, be it understood—the growth of a practice which was alleged to be common enough in the army—namely, that of applying some kind of treatment, at one stage or an other of a patient's disorder, which should denote that he had been the recipient of hospital treatment. It does not require any great acumen to penetrate through the reasons on which such practice was grounded; like everything else almost it was a question of finance.

Long ago soldiering was a detestable occupation: the army was unpopular; the period of service in it was, practically, unlimited; and the attempts to escape from it were common enough and excusable enough. Recruits were drawn from he lowest classes; and the army carried off a surplus population of the ne'er-do-wells of civil life. A bounty was the temptation, and pressing necessity, such as impending starvation, the spur to enlistment. There are numerous diseases, obscure or impossible of detection from the absence of any marked manifestations—such as epilepsy, cerebral diseases, palpitation—the symptoms of which, however latent they may be under ordinary conditions, become evident under the excitement of military exercises; and, lastly, these disabilities are capable of being simulated. It was held that men of this stamp in the army would jeopardise their own or their comrades' safety, or compromise the safety of an army itself; and it further assumed that if the army was not to become a public thoroughfare for these classes—and a very remunerative one, as every new enlistment into a fresh regiment implied a fresh bounty,—some means must be devised to guard against their admission. The treatment of a soldier in hospital, if he was to be discharged for a disability not obvious in itself or by its effects, usually included some topical form of application that left a mark.

We believe these to have been the motives and the conditions out of which the system grew and under which it was developed; for it is monstrous to suppose that cupping or blistering a man could be productive of any personal gratification to a medical officer. The Horse Guards and the War Office were, to say the least, alike content with that system. To the former it was an aid in the maintenance of discipline and efficiency; to the latter it effected a saving of money. We are far from averring that the practice was correct; but the military were a peculiar people, ruled by laws and amenable to a discipline which would have been intolerable in civil life. The times have altered. The army may now fairly compete with other branches of employment; and there is no necessity, nor is it expedient, that any means of treatment should be made to subserve any other than a strictly curative end. The public ought to be, and must be, content to pay for leeches and every drug, however expensive, that can aid in the recovery of the sick. The nation must frankly accept the responsibility of maintaining its sick and inefficient soldiers until they are cured or dead; for to discharge a patient when his disease is so advanced as to be readily recognisable is, generally speaking, to expose him to penury and starvation.

MEDICAL WITNESSES.

THE boon so ardently desired by Burns—

> "Oh! wad some power the giftie gie us,
> To see oursels as others see us!"—

has just fallen in large measures upon that portion of our brethern whose fate or duty calls upon them to give medical evidence in courts of law. The Medical Council, or rather the Committee on State Medicine of that august body, has applied to many discreet and learned persons for answers to the question, "What are deficiencies which you have observed in medical witnesses?" and has since published twenty of the answers, all of them marked by an ingenuousness in which flattery has no share. We presume that the respondents are all eminent; but we confess that we hear of some of them for the first time in their replies, and that these replies have not impressed us either with the profundity or with the accuracy of the oracles from which they proceed. Dr. Bond says, tersely, "Want of precision in their knowledge, and inability to distinguished facts *and* opinions." Is it unbecoming to suggest that he possibly meant, to distinguish facts *from* opinions? If he did, it would have been only common politeness in so critical a gentleman to couch his criticism in correct English. R. Baker, Esq. (we presume the inspector of factories), replied as follows: "Flippancy of manner, professional technicalities, and in giving hasty and tortuous answers." With all submission to Mr. Baker, we should have thought that "deficiency" in flippancy and in technicalities was an excellence rather than a fault; and the last clause of his sentence, which imputes deficiency "in giving hasty and tortuous answers," is to us perfectly incomprehensible. The art of giving answers at once tortuous and hasty must surely be a very difficult one; and any shortcoming in respect of it should, we think, be viewed with a considerable degree of indulgence. Furthermore, we fail to see its utility; and would venture to submit that both haste and tortuosity should be avoided. The only respondent who appears to have kept in view the terms of the question is Mr. Simon; who replies, truly and prudently, "Sometimes imperfect information, sometimes inperfect argument sometimes imperfect impartiality." The answer has this great value, that it is true of all witnesses; and therefore must be true of all medical witnesses among others. Lord Hatherly emitted in his reply the weighty suggestion that he "doubts whether any evidence of opinion on oath should ever be given;" and this seems to us to be the kernel of sense and propriety among a very con siderable mass of legal presumption and absurdity. The fact is, we believe, that medical witnesses differ very little from others; and that their peculiarities are individual rather than professional. Medical witnesses may fairly be divided into two asclses: the habitual and the accidental. Habitual medical witnesses are a body of gentlemen who are particularly conversant with certain questions that are often raised in courts of law (such as the effects of railway injuries, for example); whose opinions have weight with juries, and who are eagerly retained by litigants at high rates of payment. Perhaps it is not in human nature that they should not lean somewhat to the side of the suitor who seeks their aid; but they are usually quite on their guard against such learnings, and preserve, as far as possible, an attitude of complete and dignified impartiality. Perfectly at home in the subjects of which they speak, it is not easy for counsel to obtain any legitimate advantage over them, and their status secures to them the respectful consideration of all the officials of the Court. Differences of opinion arise between them, but differences only of detail, not of principle. Some take a more, others a less hopeful view of the state of a less particular patient; after the way of the two doctors by whom the quaint German fable personifies the whole profession, Dr. Better and Dr. Worse, "both men of great skill." But besides this class, there are a very few habitual witnesses whose "practice" in giving evidence produces a demeanor much resembling that of an average policeman. Usually the charlatans or sciolists of some specialty, such men hire out their sham knowledge and their witness-box faces in support of any view that their employers choose to maintain. Hence although so few in actual number, they are far too often seen in courts of law; and they are the chief causes of the "discreditable conflicts of opinion" referred to by Chief Justice Bovill in his answer, and referred to also by other lawyers, in nearly the same words. All this is unavoidable, because it is impossible to make all men, strike the same balance between conflicting considertaions, and it is also impossible to confer integrity upon the constitutionally unscrupulous. To decide between the opposing testimony is the proper province of a jury; and although it might be difficult to decide rightly on only reading the evidence, the task is not usually difficult to those who see and hear the witnesses.

The accidental medical witness, the practitioner whose evil star causes him to be consulted by some person that has been wounded or hurt by another, and who is subsequently dragged away from his business to an assize town, detained there for three or four days with no decent place in which to wait, and finally delivered over to the tender mercies of the defendant's counsel, is surely entitled to every possible commiseration. But his shortcomings, we believe, depend very seldom upon his being ignorant of the current knowledge concerning the matters about which he is called to testify, and are not of a character to be remedied by a diploma in State Medicine. He is often simply flustered by the strangeness of his position, and by the cross-examination of a cool and skilful barrister. If he suffer from defective education, it is defective preliminary, not professional education. He is not sure of the meaning of his words, or of the construction of his sentences; or he has never learned to arrange his ideas with clearness, and to express them with precision. He hopes to find a shelter behind technicalities, and thinks that to say "a black eye" will expose him more to criticism than if he says "a sanguineous extravasation in the orbital region." By repute a member of a learned profession, he has in many cases received only an imperfect mental training, and he is no match and feels that he is no match, for a barrister who is superior to him in this respect. The way to improve medical evidence in courts of law is the same that must be pursued in order to improve everything else connected with the profession. The present competition between licensing bodies must be abolished, and a State examination must be instituted of such a character that it may absolutely exclude the stupid, the idle, and, above all, the illiterate. The change will cost money, but the English public is sufficiently wealthy to bear the charge.

◆

THE USES OF THE CEREBELLUM.

In the last number of the *American Journal of Medical Sciences*, we find one more added to the many theories that have been advanced to explain the uses of the cerebellum. Dr. Weir, Mitchell, an able experimenter, who stateshe has been studying the subject for six years, after reviewing the opinions of Flourens Bouillaud, Brown-Sequard, Luys, Wagner, Ollivier and Leven, Lussana, and others, obtainsthe following results in pigeons on which he had practiced both the ablation of the organ and the application of intense cold by means of Richardson's spray apparatus. After ablation he found, in accordance with the observations of other experimenters, that, if the wound were deep, convulsions invariably occurred, together with a tendency to backward movements; and that immediately succeeding, or even accompanying these, was an in describable confusion movement, the animal staggering, &c., and exhibiting what is commonly described as an apparent want of co-ordination. Dr. Mitchell, however, is disposed to think that these phenomena may be read in another away, and suggests, on the view that the cerebellum is related to nearly all the voluntary muscles of the body, that an irritation, which embraces in one plane all of the nerve-fibres, may give rise to irregular muscular motions, whose persistence will be limited only by the length of time during which the irritation continues. "It is clear," he says, "that nothing is more likely than that we shall have elicited a confusion of muscular replies, which, for a time, will interfere absolutely with the usual dominating influence of the volitional centres. Ablation of the cerebellum is therefore equivalent, for a time, to extensive irritation of the organ;" but this gradually subsides, and, in those that long survive the effects of the operation, may wholly disappear. The only permanent change Dr. Mitchell thinks he has seen is, that in all the birds there is an incapability of prolonged exertion, the animals tiring much sooner than their uninjured fellows; but, beyond this, no locomotor defect, no alteration either in sensibility or in the sphere of emotional activities is perceptible. Vomiting is an occasional, but transitory, symptom. Diarrhœa commonly follows ablation, and persists for a week or more.

After having concluded these investigations Dr. Mitchell examined the effects of freezing the various parts of the nervous system, and found that complete refrigeration of the cervical region of birds induced asphyxia by paralysis of the respiratory nerves; but mere chilling produced gasping respiration, convulsions, backward movements, and other symptoms, which strongly reminded him of the effects of cerebellar lesions. Freezing the cerebellum induced precisely similar symptoms, and this he attributes to the congestion which cold secondarily ocaasions, acting as an irritant along the plane of junction of the frozen with the unaffected parts; and this view is supported by the fact that direct irritation of the cervical spinal cord with capsicum occasions the backward movements after some hours, the effect being also rather persistent. Dr. Mitchell made the remarkable discovery, that cold applied suddenly to definite tracts of skin in pigeons gives rise to exactly the same retrogressive movements as when the correspondent spinal règions are frozen; and when the righs or left side of the crop was frozen, the pigeon walked to the side opposite to that frozen. But a still more curious point remains to be noticed—namely, that in animals from whom the cerebellum had been removed, the effects of congelation and of irritants were still the same, the birds being yet capable of exhibiting in perfection the retrogressive acts, convulsions, and lateral walking; showing clearly that the cerebellum was not needed to produce the phenomena described: and hence Dr. Mitchell believes that "if there be such a functional entity, having a separate seat, as the so-called co-ordination, it belongs in birds to an extensive region, including the cerrebellum and a large portion of the spine. There is yet possible," he believes, however, "another view of cerebellar activity which will accept all of the facts, and account for all. Let us suppose the cerebellum to be a great ganglionic mass, possessing the same motor functions as the grey matter of the spine, related like it and through it to the voluntary muscles. Irritation of its tissue, ablation (the temporary equivalent of extensive irritation), congestions, as from cold or other causes, might occasion, both directly through the spine or indirectly by reaction on its ganglia, just such confusion of motion, restlessness, and locomotor disorder as we do actually see, and as we said, entitle it to be called the organ for co-ordinating muscular acts. As the irritation disappeared, so would the muscular disturbance, until, when there was no longer irritation there would cease to be locomotor difficulties of the character described; the spinal centres having by degrees assumed, with the aid of the will, the function shared in health with the lost organ." Upon the whole, therefore, Dr. Mitchell is disposed to deny to the cerebellum any larger share in co-ordination than exists in any ganglion employed in voluntary motion, and assigns to it a part closely realting it in powers to the chain of spinal ganglia. He regards it as a great reinforcing organ, capable of being more or less used in volitional muscular motion; and the apparent want of co-ordination observed after deep injuries is partly to be referred to the irritation of the wounded efferent cerebellar fibres, and partly to the normal activity of the will, which, in presence of the former disturding power, fails to evolve the usual orderly reply from the muscles.

◆

SIR. J. GRAY ON MEDICAL EDUCATION.

In the House of Commons on the night of the 23d ult., on the second reading of the Medica Officers' Superannuation (Ireland) Bill, Sir J. Gray called the attention of the House to a matter which had, strictly speaking, nothing to do with the subject under consideration, but which is yet of sufficient importance to be dwelt upon at all times, in season and out of season. He said that "the Goverment had been grossly negligent of its duty in failing to exclude incompetent men from the medical profession;" and he supported the statement by a narrative which, although not perfectly accurate in some minor details, was yet in all essentials, strictly and substantially true. It is strictly true that a man may obtain a medical license "who has never put his hand upon a human pulse, has never opened an abscess, never percussed a chest, handled a broken limb, or opened a vein;" and it is further true that there are many medcial examinations in Great Britain which afford no certainty to the public that the successful examinees are fitted to perform these functions. We have on more than one occasion called the attention of our readers to the fact that our Government neglects or ignores its proper office — that of protecting the persons and propety of the lieges, in order to superintend party fights and to scramble for party prizes. There are no more conspicuous examples of such neg rect than those furnished by matters connected with our profession. It seems like fiction to say that, in a country requiring perhaps twenty thousand doctors, and containing a population of which the vast majority must take those upon trust, because wholly unable to judge of their qualifications there is no restriction upon a competition between licensing bodies, each perhaps underbidding the others in the paucity and the laxity of its educational requirements, and some largely composed of the actual teachers of the candidates themselves. It seems still more like fiction to say that a Council of Medical Education has been formed of delegates from the very bodies whose competition it was desirable to check; and that this Council, year after year, has been talking against time, doubtless with all manner of lofty aims and good intentions, but actually only affording shelter and protection to the abuses that it was instituted to root up. And yet these are the very facts; for it cannot be supposed that individual medical reformers would have stood still, had not the existence and the fair words of the Council been insurmountable obstacles in the way of progress. We are glad to learn, however that these obstacles are now likely to be thrust aside, and that Sir J. Gray intends to bring the question of medical education in a direct manner before parliament. With the Council we are losing sympathy. Hostile critics go still further; saying that it has acted as the mere creature of the corporations, and that it has done nothing but gain time for the continuance of a system that is contary to common sense and discreditable to civilization. The State by its examinations as passports to its own services, has fully recognised the melancholy fact that no purchased diploma is guarded by any sufficient tests of competency and it is the plain duty of the State to protect the lives and limbs of the general public, as it does those of the soldiers and sailors, from the chartered inefficiency of men who are said to be qualified. The corporations have had the control of medical licensing too long; and they have utterly and disgracefully betrayed the trust reposed in them. The circumstance that the Council has never exerted its power of calling the attention of the Privy Council to the short-comings of any examining body has led some persons to suppose that the delegates of the corporations have con trolled the zeal of the earnest and indepehdent minority associated with them. However this may be, the present system of examination has had its day, and will, we trust, soon receive its death-blow; and the Council has now an opportunity of disarming hostile criticism for the future, by frankly pointing out the directions in which its powers are deficient, and by strongly and earnestly appealing to Parliament in order that those powers may be enlarged.

There can be no more striking evidence of the good influence of medical practice upon the higher faculties of the mind than the fact that the profession, trained as Sir J. Gray has described, is yet almost unanimous in desiring a better training for their successors. The expression of this desire by individuals will have great weight with members of Parliament; and we would urge upon our readers that they should press the following points upon their representatives, as the essentials of any good and permanent measure. First, that all medical students should receive a thoroughly good and liberal education prior to the commencement of professional training, and that they should be required to show that they had kept up the knowledge thus obtained. Secondly, that part of their professional training should be such as to afford them knowledge of the manner of conducting professional work. Thirdly, as suggested by Sir W. Jennir, that they should give satisfactory evidence of being able to recognize and treat ordinary forms of disease before being admitted to any examination in which book-learning alone, or the lessons of grinders, might enable them to achieve success. Fourthly, that a one-faculty examination, independent, of teachers, and controlled by the state, should be the minimum qualification of every practitioner, and the only entrance to the profession. To this, other diplomas or licenses might be added, as marks of distinction, or as evidences of learning in some special department. Lastly, that the minimum standard imposed by the state should be subject to periodical revision by a Council, composed of members partly representative of the profession, and partly appointed by Government; but never representative of the very bodies upon whose actions it would be their duty to sit in judgment. An act embodying these provisions, and subjecting persons who falsely pretended to be medical practitioners to sharp and easily recoverable penalties, would soon work incalculable good. Quacks avowing themselves to be quacks are not worth following; and, with a constantly rising standard of medical education, they would soon fade away and disappear. But false pretenders to medical character should be treated as rogues and vagabonds by reason of the false pretence: the State thus securing, as far as possible, that all qualified men should be fitted for their work, and that the ignorence of the public should be protected against the arts of the designing.

Medical Annotations.

"Ne quid nimis."

TIGHT CLOTHING IN THE ARMY.

A happy illustration of the beneficial effects of removing all constrictions from the neck of the soldier when under arms was given at Aldershot on July 12th. A review of the troops took place on that day, and lasted about five hours—namely, from 10 A. M. to 3 P. M.. The heat was most oppressive. Men were observed to fall out on all sides, and when a halt was made, after the review terminated, the plain was freely dotted with them. Observing that a very small proportion were Guardsmen, inquiries were made as to the actual number of the Coldstreams who fell out, and it was ascertained to have been nine in all; and of these, only two had to be conveyed in the ambulance—one having a sprained ankle, the other being ill with fits. This battalion turned out in ten strong companies, while nearly every other corps comprised only eight, and in some instances only six companies; yet we believe the number of men who fell out to have been actually more numerous in these than in the Guards, although the latter were throughout the day on the wheeling flank, and were allowed but little repose. The explanation was simple: the Guards' commanding officer had issued an order in the morning that all the stocks were to be removed and the tunic collars to be unhooked prior to starting.

Such a satisfactory result to so simple an order is most suggestive of the truth of much that has recently been written on this subject, and it is well worthy of being recorded. The whole battalion were unanimous in their expressions of the immense relief thus obtained; and we have great pleasure in stating that, according to information we have recently received, the new-pattern clothing about to be made for the Guards will render this relief permanent.

We cannot conclude these remarks without expressing a hope that in the next issue of the new loose clothing to the army, the present method of fastening the collar round the neck by one large hook and eye will be entirely done away with, as this was one of the most important defects of the old pattern; and that, in the mean time, an order similar to the one above-mentioned will be issued to the army.

A CRUISE TO THE SOUTHERN LATITUDES.

If only some people could get out of England during the winter months, they would be happy. "We have no climate,—only weather, in this country," somebody has said. There is a fine proposal to take those who like to go to the Atlantic Ocean, between the latitudes 25°N. and 25°S. where the pleasant trade winds blow, the sea is seldom rough, the sky is blue, and the temperature rarely exceeds 75° Fahr. Captain Charles Grey, R.N., proposes to fit out a British clipper ship to cruise in these latitudes, visiting the coast of Portugal, Cadiz, Gibralter, Madeira, *en route* to the cruising ground, which will be between St. Helena and Ascension to the east, and Rio and Pernambuco to the west. Pleasure expeditions will be arranged to the interiors of the different islands.

Better news for comfortable people—or rather for people who would be comfortable but for our winters and springs, and the depressing coughs, catarrhs, and rheumatisms which they bring with them—we could not publish. It is not only that patients with sensitive constitutions might in this way escape their winter attacks of illness or ailment, but that by doing so for even one winter they might greatly fortify their constitutions, and increase their chance of life, at the same time that they are having pleasant adventure. The particulars of Captain Grey's plans will be found elsewhere. The clipper will be of 900 tons register. The private cabins are of a good size, and fitted up with special reference to comfort and health, including every agreeable article of furniture.

PETROLEUM.

The Bill now before Parliament providing for the safe keeping of inflammable oils has been reprinted with the alterations which have been made in Committee. A new clause has been inserted specially to prohibit the keeping of nitro-glycerine, or glonoine oil, without a license; and even under license the bottle or vessel in which nitro-glycerine or glonoine oil is kept must have a label, to be specially devised by one of Her Majesty's principal Secretaries of State. The amended Bill repeals, in addition to 25 and 26 Vict., c. 66, and 31 and 32 Vict., c. 56, sections 8 and 9 of the Carriage and Deposit of Dangerous Goods Act (29 and 30 Vict., c. 69).

Parliament is asked further to legislate in a similar direction by a Bill brought into the House of Commons by Sir John Hay, Mr. Alderman Lawrence, and Mr. Graves, "to prohibit for a limited time the importation, and to restrict and regulate the carriage, of nitro-glycerine." The limit of the Bill is for one year, during which period it is proposed that no nitro-glycerine shall be imported into any part of the United Kingdom for any purpose whatever; and none of the substance is to be conveyed from place to place by any means whatever, whether by land or water, except under very special conditions.

It appears to us desirable that the objects embraced in these two Bills should be dealt with as a whole, and not by separate legislation.

A MEDICAL HERO.

We are very glad to learn that an army medical officer displayed, during the late epidemic outbreak of cholera at the Gambia, such devotion and energy in the relief of the unfortunate inhabitants as to gain a very warm expression of approval and admiration from the administrating admiral to the Government. According to all accounts, the scene at the height of the epidemic beggared description. The disease was of a peculiarly fatal and rapid type. The people, miserably poor, wretched and terror-stricken, endeavoured to elude attack by flight, and generally unsuccessfully. The corpses remained exposed for want of persons to inter them; and it was only by the courage and energy of the few Europeans that the panic was ultimately overcome. During the height and throughout the whole period of the epidemic, Staff Assist.-Surgeon Waters was, we are assured, untiring in his labors; and we hope that he may obtain the reward he merits in the form of promotion for his zealous and devoted services.

WEEKLY DEATH RETURNS FOR PARIS.

The Prefect of the Seine has commenced the publication of a "Bulletin Hebdomadaire" of the deaths in the city of Paris, distinguishing the principal fatal diseases. From the first of these returns it appears that in the week ending Saturday, July 3rd, the deaths from all causes numbered 840, being a mortality equivalent to an annual death-rate of 23 per 1000 of the present estimated population of the city. The corresponding death-rate for London during the same week was 20 per 1000. In Berlin the mortality during the seven days ending July 1st, was at the annual rate of 34 per 1000 of population. Small-pox was fatal to 4 persons last week in London, and to 16 in Paris; scarlet fever and measels to 12 in Paris, and to 97 in London; bronchitis and pneumonia to 101 persons in Paris, and to 146 in London; croup to 7 persons in both cities. The present estimated population of Paris is 1,889,842, and of London, 3,170,754.

THE LATE MR. PROPERT.

In the vestibule of the Royal Academy, amid a crowd of statuary, there is one bust which possesses peculiar interest to the members of our profession, not only on account of the great claim to respect which belongs to the person represented, but also from the admirable likeness of his model which the sculptor has presented. This is a bust of the late Mr. Propert, founder of the Royal Medical Benevolent College. We must congratulate the artist, Mr. Morton Edwards, upon the success which has attended his efforts to perpetuate the personal traits of one whose memory must be constantly cherished in connexion with the noble institution which arose out of his untiring efforts. Mr. Edwards is already favorably known by his busts of Messrs. Gladstone and Bright, the present Archbishop of Canterbury, Mr. Peabody, and many others. He will add to his reputation, we should think, by the faithful likeness which he has produced of one who was so widely known as the late Mr. Propert.

UNQUALIFIED CANCER CURERS.

Can nobody stop the application of arsenical plasters by unqualified practitioners? We have lately had to report two deaths from this cause, and now a fatal case has occurred in Newcastle, in which several plasters were applied, causing a large slough of ten or twelve inches in circumference. The internal appearances and the symptoms were those of death from arsenic. The coroner said he would have to send a copy ot the de-positions to the Home Setretary, and get his permission to have an analysis of the contents of the stomach. What a comment on the protection of the public and the efficiency of the Coroner's Court! The inquest is adjourned till the 2nd of August next.

HOW SHALL WE DRESS HIM.

This is a question which has been asked a good many years, and one which, practically, devolved upon military men to answer. It appears probable that it has now been decided, and that we shall see our soldiers well and properly dressed. The British soldier has been the victim of many absurd theories, with no little injury to his health and efficiency. To dress him in a loose blouse like a "Norfolk" coat! Why the thing would have appeared monstrous in the extreme in the eyes of men like the Duke of Wellington, or in those of that fine old martinet—for he was a brave soldier of the old school,—the late Sir George Brown. Our readers must be tolerably well acquaiated with our views on the subect of dressing and accoutering the soldier. We have always condemned the system of ligaturing the throat, compressing the chest with straps and a pack, pipeclaying the belts, and fitting the feet to the boots instead of *vice versâ*; and we have lived to see the day when all these things are, or soon will be, remnants of a past age. The high, tight-fitting stock has been sacrificed, pipeclay has nearly become a term of reproach, the new knapsack will replace the old and very objectionable one, the boots are as good and of as many sizes as can be reasonably expected, flannel has been in a great measure substituted for cotton shirts, and the tight-fitting tunic, which transformed what ought to have been the supple form of a young soldier into something resembling a wooden one, is now to give way to a loose blouse, which will allow of perfect freedom of respiration and muscular action. The great coat is to be made of lighter texture, and to have an addition in the way of a waterproof cape. The only thing which remains to baffle the efforts of our military reformers is the red tape. We congratulate the authorities on their preception of what are the requirements of a soldier. It has been so long the fashion with military people in this country to fall down and worship the old German type as the correct model of what the soldier ought to be, that they apparently shut their eyes to the facts that they were daily encountering. The blacksmith, and every other man engaged in strong muscular exertion, when left to his own guidance, always removes all impediments to the action of the muscles of the neck and chest. If the Snider rifle is to be used, and the quick marches, running drill, and working at entrenchments are to become, as they have become, ordinary military exercises, the soldier will require more than ever that his physical powers should be taxed as little as possible by the restraints of a tight dress or by weight he has to bear; and for the first time in his life he will, we think, possess a dress and accoutrements answering these requirements.

POISONED SOCKS AGAIN.

When we published a paragraph to the effect that some persons had been poisoned by their socks and underclothing, there were many who thought it a little piece of sensationalism; and they viewed our statement with incredulity, to say the least. It was probably thought to rest upon much the same sort of foundation as the classical story of the poisoned tunic given to Hercules by Denjanira. Since that time, some experiments which have been undertaken have proved that several of the fashionable dyeing ingredients in use are active poisons; and we have quite recently seen one well-marked example of a troublesome and painful local affection induced by the absorption of a dye through the skin. A gentleman purchased some socks, with a magenta stripe, at a well-known London house. He wore a pair of these one day during the recent hot weather. At night he felt a good of irritation and tingling in his feet, which he ascribed to the attack of a nameless animal. In ignosance of the true cause, he continued wearing rocks of the same pattern for two or three days more; at the end of which time the skin of the heels had become red and inflamed, where the edge of the shoe probably caused most friction, and this was succeeded by a line of vesication disposed in a semicircle around the heel and side of each foot. The disease thus artificially induced was symmetrically placed on the two feet, and corresponded with one of the colored stripes. He noticed that some of the dye had colored the part. The pain was sharp, and the blistering far too well marked to be pleasant, as it rendered him lame, and his socks have consequently cost him twice their value in cab-hire.

Drr. Tardieu and Roussin, in a recent memcir on "Coralline"—the name of the new dye posessing the poisonous quality,—relate numerous cases in which cutaneous affections have resulted from its action. The exact composition of coralline has not been determined. It is a derivative of rosolic acid, a substance obtained from carbolic acid. That usually sold is a rosolate of soda, and the yellow variety is rosolic acid. According to these authors, an alcoholic solution, when injected subcutaneously into animals, acts as a poison; producing violent inflammation at the place of injection, and giving rise to inflammation of the intestines and lungs, fatty degeneration of the liver, &c. Introduced into the food of rabbits, it gives rise to similar effects; and, like madder, the coloring matter acts on growing bone, imparting to it a red tint. From the lungs of animals into which coralline had been injected, sufficient of this substance was extracted to dye a piece of silk red. Coralline exhibits several chemical reactions by which it may be distinguished from other dyes.

BEARDS IN THE NAVY.

We are happy to see that the force of example in the person of Mr. Childers, the First Lord of the Admiralty, has prevailed over the prejudices of admirals who stick as firmly to their razors as their fathers did to their pigtails. By a circular just issued, the Lords of the Admiralty direct—1. That officers and men on board her Majesty's ships, including the Royal Marines when embarked, will in future be permitted to wear beards and moustaches. 2. In all cases, when the permission granted in Clause 1 is taken advantage of, the use of the razor must be entirely discontinued. Moustaches are not to be worn without the beard, nor is the beard to be worn without the moustaches. 3. The hair of beard, moustaches, and whiskers is to be kept well cut and trimmed, and not too long for cleanliness. 4. Royal Marines on shore will follow the regulations of the army with regard to beard and moustaches.

We congratulate the Admiralty and their sailors on this concession to the representations of the medical officers of the Fleet; and we feel sure that an improved state of health will be manifested among the crews when they have availed themselves of the covering Nature provides for them. The regulation inculcating "the whole hog or none" appears to us reasonable; for any "fancy rigs" as regards beard and moustache would be out of place on board ship. For a few weeks, no doubt, the crews of our ships will necessarily present a somewhat untidy appearance, but time will certainly set this right. One immediate advantage which the junior members of the profession will enjoy from the new order is, that unsuccessful candidates for the Army Medical Service will be able to fall back upon the sister service without losing those hirsute adornments which have received so much attention, and which have hitherto been ruthlessly condemned by the authorities of Somerset House.

JAMAICA MEDICAL NEWS.

Several interesting particulars relating to medical matters in Jamaica have reached us by the last mail. In the first place, cinchona cultivation seems to be progressing favorably. About 20,000 young plants of the C. officinalis and 10,000 of C. succirubra will be ready for sale at the Government plantations early next year. The trees grow with surprising luxuriance, as has been evinced by upwards of 1000 plants temporarily planted fourteen months ago, then a few inches high, being now from three to four feet in height. Dr. Downer, the health officer of the port of Kingston and Port Royal, has retired on a pension of £200 a year. The Jamaica Lunatic Asylum has been much improved in its management under Dr. T. Allen, but it is overcrowded, and two new ranges of buildings are to be erected. Yellow fever has now left the island. Good results have been obtained in the treatment of cases of this disease by the free exhibition of carbolic acid. The dry-earth system has been adopted with great success in several of the public institutions. The most important item of news is the appointment of a board of examiners under the Medical Act of 1859, to examine medical men wishing to practice, and who do not possess a British degree. The board consists of Dr. Stevenson, Superintendent of the Public Hospital, Dr. T. Allen, Dr. Dunn (Chairman), Mr. Scott, Dr. Fiddes (Secretary). The Public Hospital is to be the place of meeting. The examination will be conducted *vivâ voce*, and in writing; and, in the event of the candidate being a foreigner, and unable to give the necessary answers in English, he shall provide a non-medical interpreter, to be approved by the board. The subjects upon which the candidate may be examined will be as follows: Anatomy, Physiology, Surgery, Medicine, Midwifery, Medical Jurisprudence, Chemistry, Materia Medica, and Pharmacy. The new Medical Bill, which the profession is looking anxiously for, has not yet been brought before the Legislative Council. What it will be is not yet known, but it is hoped that it will be of such a nature as to hold out advantages to medical men to settle in the country districts, where they are so much needed.

CLINICAL TRAINING.

Every one is agreed, whatever differences exist with regard to the manner in which the student may best acquire a knowledge of his profession, that the chief modification in pass examination which is needed is the introduction of a more certain and searching means of testing the clinical knowledge of the candidate who presents himself for a license to practice. An important step towards this end has been taken by the Medical Teachers' Association. The Association recommends that before any student is permitted to commence the written portion of his final pass examination, he should be required to satisfy his examiners that he is practically conversant with disease. As Sir W. Jenner explained, it is desirable that a candidate should not have the least opportunity of exhibiting his book knowledge until he has proved that he knows disease clinically, and we should add, its proper treatment; certainly those cases, some of which, at least, he would be sure to meet with during the very first week of his subsequent practice. In order, however, to make such a plan work satisfactorily, it would be necessary, of course, to apply fair and proper tests of the student's knowledge; not, for instance, to require him to recognize exceptional conditions or phases of disease which even an older practitioner might only see once, or a few times at the most, in a lifetime; but well-marked and typical instances of diseases which can be always seen and examined in the wards or the out-patient's department of an hospital during a limited period of attendance. Then the failure to recognize common forms of disease should be certain rejection. A candidate who could not diagnose a well-marked mitral murmur, an enlarged liver or spleen, a syphilitic node, or tell the presence of blood in the urine, is utterly unfit to treat the sick, and should be prevented from so doing by the most stringent barriers. In fact, in his final pass examination, mere book knowledge, with which the candidate may be filled to overflowing, should help him nothing till he has shown the fruits of a regular attendance upon hospital practice. The adoption of the suggested plan would certainly put a stop to the manufacture of successful theorists, many of whom carry off medals and exhibitions wholesale, and subsequently sink into comparative insignificance amongst the mass of practical physicians and surgeons of their day. There may be difficulties in the way of training large bodies of students in the practical details of medicine, during the period of their hospital attendance, up to the standard which would be required by such a test as that which we are considering; but these, we imagine, are very likely to arise from the imperfections in the teaching machinery, and not solely in the taught. It would be necessary, perhaps, that the teacher should devote more time than he does at present to the student, and that his teaching should be more systematic. If a large practice is incompatible with this, young and less engaged men should be the teachers, or the number of the latter should be increased. It is not that the student is even now wholly in fault for his want of clinical knowledge; some blame lies at the door of the teachers; and in the better preparation of the student of the future in a more practical acquaintance with disease, the work of both student and teacher must be increased.

With regard to the examination itself, there need be no difficulty in finding a sufficient amount of proper material for testing the clinical acquirements of candidates. The University of London and a few other bodies have found it easy enough. The questions will be pressed on the attention of the General Medical Council, at the instance of the Association, and we hope that it will receive the consideration it deserves in connection with the general question of medical education which the Council has now in hand. We are quite in accord with Sir W. Jenner—whose experience as a clinical teacher is second to none—in the opinion that the adoption of a plan by which the candidate for a license to practise would be required to give evidence of the possession of sufficient clinical knowledge, and which would entail rejection at once for any deficiency in this respect, must operate so as to take the student away more and more from his book, and bring him constantly to the wards. Once secure his attendance there, and the difficulties in making him learn, provided the teacher is earnest, are readily overcome.

Reviews and Notices of Books.

A Hand-book of Therapeutics. By SYDNEY RINGER, M.D. Small 8vo, pp. 485. London: H. K. Lewis. 1869.

THIS work is deserving of praise as a laborious compilation of much that has been written and said of the application of the commoner medicines in the treatment of disease. The reader must not expect to find in Dr. Ringer's Hand-book any general exposition of the theory of the action of medicines. It is chiefly devoted to the practical side of the question. One fault that we must find with it *in limine* is, that the author seems but superficially acquainted with the many standard works on the subject in English. His treatise is founded on the German work of Buchheim. He has, perhaps, intended to return the compliment which has been paid to us abroad. The most important work on therapeutics which has appeared in Germany—that of Professor Albers, of Bonn—is founded upon a well-known English book, and is, in fact, in great part, a mere translation of it. It would have been better, perhaps, if Dr. Ringer had contented himself with giving us a translation of Buchheim's work. He would then, at least, have escaped the responsibility of fathering Buchheim's errors. As a correct understanding of the *modus operandi* of drugs is the only rational excuse for their employment in novel cases of disease, we are justified in placing theoretical therapeutics, as far as they have been worked out, on a higher level than the random results of empirical observation. An error in science leads to a misdirection of art. Men of the present day, who like to know the reason for everything, are scarcely convinced by being told that a certain drug will cure a certain disease. They wish to know how it is that this medicine operates; and when they understand that, and only then, they accept the fact of the cure as a logical conclusion doubly justified. This book of Dr. Ringer's leaves a void in our minds by not attempting to show how it is that these medicines work out all the wonderful results which are detailed at such length. Thus, bromide of potassium is said to cure almost every one of the ills that flesh is heir to. How it can cure them is not explained. And who can wonder that we rest incredulous as to the facts paraded before us until we have tried the drug upon a large number of our patients—an experiment that may result in disappointment and confirmed unbelief? This medicine has its uses, which we do not mean to gainsay; but it is not an all-healer, an *elixir vitæ*, an *aurum potabile*. This book of Dr. Ringer's would involve any man, who was not versed in the theory of the action of medicines, in great bewilderment. It is founded, we are told, on the German work of Buchheim; but as it comes to us in a quasi-original English shape, we have no choice but to hold its English author answerable for its mistakes of omission and commission.

On page 33 we are informed that, when charcoal is given internally, "a little finds its way into the blood and lymphatic glands." On page 76 we read that acids possess the power to check the production of acid secretions from glands, and to increase the flow of alkaline ones; while the reverse is the case with alkalies. On page 92 the statement is repeated. We should have supposed that none but the so-called homœopathists would dream of prescribing acids for over-acidity, or alkalies for deficient secretion of an acid gastric juice. It is stated, on page 113, that magnesia only acts as a purgative by being changed into a bicarbonate by carbonic acid gas in the intestines. Does Dr. Ringer doubt that the secretion of the stomach is acid, and capable of forming the magnesia into a soluble salt, lacerate or hydrochlorate? He seems quite unaware that it has been proved that sulphate of magnesia and other salines will act as purges when injected into the veins of any part of the body; that when taken into the stomach they are absorbed there, and only pass out by the glands of the lower bowel after performing the circuit of the blood. As he fails to apprehend the *rationale* of the action of eliminative medicines, so is he equally unaware of what has been done by English, American, and

French therapeutic writers in clearing up the action of the medicines which take effect upon the blood. His theory of the action of saline purgatives, founded upon "Buchheim's careful observations," was entertained, it is true, in the infancy of therapeutical science, but has been utterly exploded by recent and more careful inquiries. This is nothing to the utter ignoring, in Dr. Ringer's book, of the explanation which has lately been given of the action of quinia and other tonic medicines in disease. The hypothesis was put forward by Dr. Headland, many years ago, that these remedies were of use in supplying something which was wanting in the blood. It was found at that time that only a small proportion of the quinia taken as medicine was excreted from the body. It was supposed that the remainder was used in the manner of food, as a "restorative" medicine. Since that time, Bence Jones and Dupré have discovered in the healthy blood a substance analogous to quinia; and two American physicians have stated that this material is deficient in quantity in cases of ague and remittent and typhoid fever. Whatever doubt may still rest on the completeness of this chain of argument, it is at least the duty of a writer on therapeutics to take some notice of it. It seems that Dr. Ringer has no knowledge of it. Nothing is said of it in the work of Dr. Buchheim.

Our author must again be taken to task for his deficient apprehension of the theory of the action of vegetable astringents. He states that gallic acid precipitates albumen, which is not the case. Gallic acid is not an astringent externally; it becomes astringent internally by combining with the elements of glucose and forming tannic acid. The knowledge of this fact will enable us to avoid the mistakes which are sometimes made in prescribing, and which would not have been authorized by Dr. Ringer if he had taken the pains to make himself better acquainted with English works on therapeutics.

We must award our meed of praise to the industry—we have much respect for the ability—of the Professor of Materia Medica at University College; but we must warn him that, if he wishes to escape the severer criticisms of others, he should devote in future some portion of his time to a more careful study of the results of the labors of those who are older than he, in a field which he affects to regard as all but unploughed and untrodden by his predecessors.

A Treatise on Syphilis. By Walter J. Coulson, F.R.C.S., Surgeon to the Lock Hospital, and to St. Peter's Hospital for Stone and Urinary Diseases. London: Churchill and Sons. 1869.

Mr. Coulson's book is founded, he tells us, on a course of lectures delivered by him four years ago at the Lock Hospital. If the author had published his lectures then, he would have anticipated several of the many works which have recently appeared on the subject, and his labors would have occupied and merited a much higher place than they will now obtain. Within a very recent time a good many excellent observers, tired of being bound by the doctrines of authorities, however eminent, have been examining the subject for themselves after a very careful and exhaustive method; and the consequence has been that our knowledge of syphilis has gained wonderfully in extent and precision. Theories which four years ago Mr. Coulson was fully warranted in enforcing with distinctness, and illustrating with all the clinical observation he could advance in their favor, have, in the interim, been pretty well accepted as proven. We have on previous occasions dwelt at much length on the aspects of modern syphilography; and we need not therefore go over much of what would prove old ground. If Mr. Coulson publishes a second edition, we would counsel him to discard the term "infecting chancre" altogether. It is a misnomer,—because, as he would confess, systemic infection is not the effect of the hard chancre, that form of lesion being itself only the earliest link in the chain of constitutional syphilitic phenomena, the development of which would not be averted by an excision or destruction of the chancre. He dwells, and very correctly in our opinion, on the sum total of the characters which distinguish the true syphilitic disease from first to last. With reference to induration, he remarks that a recurrence of this at the base of a chancre often takes place in the course of the disorder,—the truth of which statement we can corroborate.

In alluding to the inoculation experiments performed by Mr. James Lane, Mr. Gascoyec, and himself, at the Lock Hospital, the author shows that the form of the ulcer may be changed, while its essence remains the same.

As to the abortive treatment of soft sores by their early destruction with a strong caustic, we would remark that we are not quite so positive as some surgeons appear to be that the progress of the case is greatly expedited by the practice; at least we could not satisfy ourselves that it was. There is, however, this to be said in its favor—namely, that you diminish the risk of the occurrence of suppurating bubo, and you probably also prevent the occurrence of several complications to which the sore is liable—all of which tend, of course, to protract the period of cure.

The chapter on Malignant Syphilis is a good one. The great thing to remember in cases of this form of the malady is, to be very careful about the administration of mercury, as it almost invariably does harm. The treatment of the disease generally appears to have been judiciously laid down by the author. He is not in favor of using mercury during the primary stage; and we agree with him that it is better to hold one's hand until the general manifestations have made their appearance.

The pathology of syphilis, and of the various lesions it induces, both on the external surface and in the internal organs of the body, is fairly discussed, considering the space at the author's disposal, and the immense number of facts that have of late years been added to our knowledge on the subject.

Although Mr. Coulson has been unfortunate in the selection of the present time for the publication of his book, we think that he has written a good practical treatise notwithstanding, and that his views are, in the main, sound and true, if they cannot be termed very new.

Nouveaux Elements d'Histoire Naturellè Medicale comprenant des Notions Génèrales sur la Zoologie, la Botanique, et la Minèralogie, &c. Par D. Cauvet, Professeur agrégé à l'Ecole Supérieure de Pharmacie de Strasbourg. Tome I. & II. Avec 790 Figures intercalées dans le texte. pp. 520 and 770. London: Bailliarè. 1869.

We have taken some pains in reading through a considerable portion of M. Cauvet's work, and in comparing it with those which treat of the same subject in English, and we are glad to express a very favorable opinion regarding it. Much less prolix than the great work of Pereira, it is yet much fuller than the "Essentials" of Dr. Garrod; whilst it differs from both in containing no account of the doses or pharmacopœial preparations of any of the substances of which it treats; yet it seems to us to contain precisely the knowledge that a thoroughly well-informed pharmaceutical chemist should possess, and with which every student of medicine should be familiar.

The first volume commences with a brief account of the mammalian type of structure, the various systems of organs being separately and clearly, though of course very succinctly, described; the different classes are then discussed, their distinctive features mentioned, and the animals that are either directly or indirectly used in medicine referred to. Thus, under the head of Rodentia the characters of the class are given, followed by a special account of the beaver and of castoreum, illustrations being added of the animal itself, of its genito-urinary apparatus, and of the Canadian and Siberian castoreum. Birds, reptiles, fish, and the invertebrata follow, each division being treated in the same manner. We would call especial attention to the account of the entozoa, which for a work of this kind is given at great length (46 pages), and with admirable clearness of detail, the drawings being taken from the standard works of V. Beneden, Leuckart, Davaine, and others.

The Botanical section commences with a good general exposition of the structure of plants, the different organs — as the roots, stem, leaves, and flowers — being successively considered; with the functions of absorption, circulation, respiration, and multiplication to which they are respectively subservient. The woodcuts illustrating this part, as indeed those thickly distributed through the whole of the work, are really beautifully executed: and though comparatively few of them are original, having been taken from the larger treatises of Duchartre, Hofmeister, Tulasne, and others, they have been judiciously selected, and are quite new to English readers.

The second volume of the work is occupied through the greater part of its extent with the distinctive characters of the several orders, and the peculiarities and properties of the plants that have been employed in medicine. Thus, taking the Ranunculaceæ, we find, first, an account of the order, with a differential analysis of its five subdivisions of the Clematids, Anemones, Ranunculuses, Hellebores, and Pæonies. These are then considered separately,— the particular plants described being the Clematis, and the Anemone pulsatilla, Ranunculus repens, Eranthis niemalis, Helleborus niger, H. viridis, H. fœtidus, H. orientalis, Nigella arvenis, N. damascena, Delphinium consolida, Aconitum napellus, A. cammarum, A. ferox, A. lycoctorinm, A. anthora, Pæonia officinalis, Actæa spicata, and Podophyllum peltatum. Drawings are given of the flower and fruit of the Clematis; of the flower-leaf, and style of Anemone pulsatilla; of the flower of Ranunculus repens; of the plant, flowers, and stems of the Hellebores; and of the flowers of Nigella, Delphinium, and Aconitum. In each instance the chemical properties, its medicinal effects, and the principal diseases in which it has been employed, are noted. About the last 100 pages are devoted to the Mineral Kingdom; and this is the least satisfactory portion of the work, the space being obviously too small to embrace any useful account of the several metals. Nevertheless, it contains a capital description of the main facts of crystallography, and some of the more important mineralogical specimens belonging to each metal — as oligist limonite, siderose, pyrites, sperkise, leberkise, &c., under iron; and zigueline, chalkosine, panabase, malachite, &c., under copper. A good index completes the work.

We congratulate M. Cauvet on having executed a difficult task with great ability; and are sure that none of our readers will think the half-guinea that it costs ill spent, when they find that its perusal posts them up in all the more recent advances that have been made in the extensive domain of natural history.

Sound. A Course of Eight Lectures delivered a the Royal Institution of Great Britain. By JOHN TYNDALL, LL.D., F.R.S. Second Edition. London: Longmans. 1869.

THE contents of Prof. Tyndall's books are of so attractive a nature, and recommend themselves so strongly, not only to the *dilettante* lover of knowledge, but to those who are earnestly engaged in the cultivation of science, that we are not surprised a second edition has been speedily called for. Having already noticed at length, in our review of the first edition, the characteristic features of the work, the number and ingenuity of the experiments (in which Prof. Tyndall stands without a rival), the felicitous explanation and varied illustrations, we need here make no further remark than to say that the present is a reprint of the former edition, with the exception of a chapter containing a summary of the recent researches of M. Regnault, written by himself. This contains some interesting observation on the propagation of sound in closed tubes, in which it is shown that the diameter of the tube makes a considerable difference in the intensity with which the wave is propagated through it, diminishing rapidly the smaller the section of the tube. Thus when a pistol charged with one gramme (15·44 grains) of powder was discharged in the gas-pipes of Ivry, ·108 of a metre wide, the report was heard at a distance of 566·7 metres, but greatly enfeebled; and when this end was hermetically closed, the echo or return wave, at the point where the pistol was discharged, was only heard when the greatest possible attention was paid. On the other hand, in the great conduit water-pipe of St. Michael, the diameter of which is 1·17 metre, the wave was not only very intense at the further end of the tube, but when this was completely closed with a plate of iron the return wave retained sufficient intensity to be heard outside the tube at the point of discharge — that is, after a transit of 3,180 metres, or nearly two miles. After a second reflection from the distal extremity of the tube — that is, after traversing 6,360 metres — it could still be distinctly heard; and it was not till after a third reflection at the most distant point that absolute silence occurred — that is, not till after the wave had traversed a total path of 9,540 metres. There are other interesting facts described in reference to the velocity of the propagation of waves, which we have not space to give, but which will well repay perusal.

The Practice of Medicine. By T. HAWKES TANNER, M.D., F.L.S., &c. In two volumes. Sixth edition, enlarged and thoroughly revised. pp. 1,301. London: Renshaw 1869.

Dr. TANNER has always shown in his writings that he possesses a peculiar faculty of committing to print just that kind of information which the practitioner most needs in every-day practice, and of rejecting useless theory or hypothetical statement. In no work of the author is this more conspicuous than in the present and sixth edition of "The Practice of Medicine," which now appears in the form of two handsome volumes of some 650 pages each, — exceeding, in fact, by no less than 400 pages of new matter, the former edition. When we remember how vastly the literature of medicine has increased within the last few years, what shiftings of opinion have taken place, how much research of questionable accuracy, and, still more, how great an amount of theorizing has been infused into the large subject of Medicine, the feature of the work before us to which we have alluded acquires unusual significance and value, at a time, too, when book manufacture has reached a dangerous pitch. Though a sixth edition, it is only right, as Dr. Tanner's work is largely used, that we should criticise the additions which have now been made to it, and represent the progress of practical medicine during the last four years.

The author remarks, in his Preface, that "inasmuch as our knowledge of diseases and their treatment has been steadily advancing since the publication of the last edition, in July, 1865, I have been exceedingly unwilling to allow these volumes to pass out of my hands until such new matter as was necessary had been added, and until every page had been carefully and deliberately conned over." This accounts for some delay in the appearance of the work. The aim of the work, stated in the author's own words, is to make "its pages the medium of as much practical information as possible. . . . to adopt a style which should be terse without being obscure . . . and to give particular prominence to those points which will aid the practitioner in the discharge of his responsible duties at the bedside."

We have taken certain test subjects, as they may be called, to ascertain whether the author has succeeded in his aim. Under the heads of Glucohæmia, Amyloid Degeneration, Aphasia, Locomotor Ataxy, Bright's Disease, Syphilitic Diseases of Internal Organs, &c., we find a summary of the views of the most recent writers. A very good illustration is afforded by the way in which phthisis is handled. Dr. Tanner remarks that —

> "Phthisis has usually been regarded, until very recently, as synonymous with tubercular disease of the lungs. The time, however, seems now to have arrived when it may advantageously be allowed that several diversea ffections, radically distinct from each other, should be included under the common designation of phthisis, or pulmonary consumption. Instead, therefore, of restricting these expressions to indicate that morbid condition which arises from the deposit of tubercles in the lungs, they ought to be em-

ployed as generic terms for those pulmonary diseases which are characterized at first by progressive condensation, and subsequently by suppurative degeneration with excavation of the affected portions of lung tissue; these local changes being in some instances preceded, in others only followed, by constitutional disease."—Vol. i., p. 569.

The varieties of "phthisis" are then declared to be—(a) hæmorrhagic and embolic; (b) bronchial and pneumonic, including grinders, asthma or knife-grinders' rot, miners' phthisis, and the lung disease seen in millstone-makers, cotton-workers, &c., and subsequent to pneumonic consolidation; (c) syphilitic phthisis; (d) fibroid phthisis; (e) tubercular phthisis. All these are well described.

The author has not forgotten the laryngoscope, nor to tell the practitioner how to use it. The significance of alterations of temperature in disease is noted too. On turning to the sections on the ophthalmoscope, we find it correctly stated that in cerebro-spinal diseases the occurrence of symptomatic lesions about the fundus of the eye is found to be the rule, rather than the exception; and the appearances in Bright's disease of brain inflammation and syphilitic diseases are depicted. Bouchut's observations are mainly quoted; and the only point upon which we should be disposed to be critical is the non-mention of the observations of Clifford Allbut and Hughlings Jackson; but we suppose space was precious. About 150 pages are devoted to disease of females. Bright's disease is divided into acute and chronic, in acordance with the plan recently proposed by the College of Physicians; and the chronic variety is made to include the granular, the fatty, and the lardaceous kidney. The views recently propounded by Grainger Stewart, Dickinson, and others, have justice done to them. In the present edition 77 pages are devoted to the formulary, 23 to a section on climates for invalids, and 20 to mineral waters. In these sections a large mass of new and useful information is comprised. The index is a little work of itself: it is very copious, and extends to 46 pages.

The result of the labor bestowed upon the work by its author is evident everywhere in its pages, and it is for that reason that we have felt bound to notice the sixth edition at greater length than we should otherwise have done. Without instituting any close comparison between this and other standard works on Medicine, it may be safely said that there is no work which better deserves the title of the "Practice of Medicine" than that under notice, and we are only doing Dr. Tanner justice in saying so. The publisher also has succeeded in his treatment of the book: the paper is good, and the printing large and clear.

Odd Papers.

THE SICK POOR OF PARIS.

By Blanchard Jerrold.

NO. VIII.

HOSPITAL BEDS FOR THE POOR.

The confused ideas about the proper relation of the hospital to the poor which have been manifested of late in England, provoked by Mr. Goschen's Bill, and Mr. Torrens' opposition to it in the company of nine metropolitan members, tempt me to offer your readers a brief indication of the manner in which the hospitals of Paris (the creations of public benevolence) are worked in harmony with the Assistance Publique laws. Here there are no establishments like those on which Mr. Goschen is good enough to propose the reduced expenditure of one million sterling, to be got out of the pockets of men, many of whom have not one farthing of property, and themselves depend on their daily health for their daily bread. The ideas which prevail in London and in official circles, as well as in the outer world, about the Assistance Publique of Paris, are, in many important respects erroneous. To begin with, *it is* generally conceived that the gigantic infirmaries with which London is to be endowed, are recommended by the success of similar institutions in Paris: the fact being that here no necessity whatever exists for special hospitals for the pauper sick: just as in Belgium there is no need for a separate series of pauper madhouses. Instead of perpetuating an expensive and a destructive confusion and antagonism between independent charity and State charity, the French were wise long ago, and took advantage of the gifts of noble citizens to the fullest, by putting the administration of them in harmonious operation with the help which the State or municipality had elected to bestow on the defenceless poor. No violence whatever was done to the testamentary wishes of hospital founders. The princely Montyon legacy to the lately suffering was held sacred in the channels originally traced for it. Every benevolent person who has founded a bed in the Incurables Hommes or Incurables Femmes has a right which is respected scrupulously. There is not in the Assistance Publique a centralization which benumbs individual charity; but rather a sympathetic and general direction that encourage it, by giving to every groat in the poor-box, every centime put into the bag at the church door, its fullest relief value. An admission card lies before me, given to me by M. Husson, on the back of which is printed a list of the various institutions which are under his sway. They will give the reader an idea of the comprehensiveness of the Paris system, and at the same time show him that Paris is not provided at the public expense with a series of district pauper hospitals. Here is the list:—

General Hospitals.—The Hôtel Dieu, Notre Dame de Pitié, Charité, Saint Antoine, Necker, Cochin, Beaujon, Lariboisiere.

Special Hospitals. — Saint Louis, Midi, Lourcine, Enfants Malades, Saint Eugénie, Maison d'Accouchement, Cliniques, Maison Municipale de Santé.

Asylums and Retreats. — Bicêtre, Salpetriére, Incurables Hommes, Incurables Femmes, Enfants Assistes, Menages, Devillas, La Rouchefoucauld, Sainte Perine, Chardon Lagache, Saint Michel, La Reconnaissance.

Establishments for the General Service of the above. — Central Bakery, Central Pharmacy, Magasin Central, Central Meat Depot, Central Wine Cellar, Anatomical Amphitheatre, the Municipal Direction for Nurses.

The asylums and retreats, like the hospitals, are private foundations: and the history of most of them is to be found in "Les Bienfaiteurs des Pauvres" in the "Annuaire de la Charité, &c." Pious people will found a bed at the Incurables Hommes or Femmes; and they are masters of it, subject, of course, as in every private charity, to the rules of the place. This subordination of private as well as State charity to one intelligent central authority does not, I insist, weaken the spontaneous benevolence of individuals; nor does the strictness with which the Assistance authorities require their unpaid visitors and committeemen to attend to their duties to the poor and in the council chamber, lessen the number of gratuitous servants of the adminstration. There is nothing sadder nor more scandalous in the history of English charity than the records of millions wasted which it comprehends. With British generosity and French administration, the case of even our great army of martyrs to a bad Poor Law might be grasped. As it is, we show builders for ever busy on new architectural wings; the London Tavern perpetually steaming with the rich juices of charity dinners; and 20, 30, 40, nay 50 per cent. of Samaritan gold warming the palms of secretaries, architects, and the like. Nor is this all, nor the worst part of the blundering. The poorest are not the people mostly helped. The French have their *pauvres honteux*, of whom they take the most delicate care; while we are the dupes of hosts of unabashed and undeserving poor, who hunt up votes for admissions to asylums, have an unerring scent after tickets of all kinds, and have the charities of London as closely at their finger-ends as Dr. Sampson Low, Jun. The oldest as well as the newest of our great private charities are diverted, in some measure, from their proper uses. Each independent body acts in royal independence of its neighbor. The governors know little or nothing of the general condition of the poor. Nobody takes the trouble to glance into the neighboring parish. There is a vulgar, bustling hunt after patrons in all directions. The personages who deign to preside when the charity is bound to speak in public, and to implore yet another wing, are posted up for the occasion, and dutifully earwigged by "our indefatigable secretary." Brown and Jones discuss the amount they *must* give, over their plovers' eggs.

This may be charity, and charity made easy; but it is, I venture to submit, clumsy, wasteful, and harmful. The reform which is wanted, to begin with, in England, is in the direction of consolidation, and not of new barracks for mad or sick. The philanthropically disposed are repelled from the workhouse. Who offers assistance, in a spirit of brotherly kindness, to the Poor-law authorities? Is there the least community of feeling or of opinion between Poor-law officers and, say, the Society for the Relief of Destitution in the Metropolis? The vast and splendid hospitals with which London is provided show many empty beds; while the workhouse infirmaries are overcrowded. Each parish works its own way; each hospital is a separate kingdom; each asylum is a fortress. The poor are neglected in one street, and kindly used in another. Even decent mortuaries are not uniformly provided in every part of London. All is hap-hazard, sloth, or activity, with self sufficiency agog in every vestry and board-room. The money spent is enormous, and the result is a daily increasing rate of pauperism,— because the poor are neglected until they become permanent paupers; because the children are left in the streets; because none of the relief is remedial — except that which the Jewish guardians afford to their people. In Whitechapel, the poor Jew is the only man who is helped intelligently out of his poverty. The reason is, because the Jewish guardians are modelled, in their ways of proceeding, on the harmonious machinery of the French Assistance Publique. They have a searching system of outdoor relief for the sick, conducted by voluntary visitors of their own persuasion, accompanied by efficient relief that keeps the home together; and they have hospital beds to which they can send those patients who cannot be treated at home. All their charities are in unison, and act and re-act upon each other. The volunteers who serve the poor are in force; and hence a thorough inquiry into the condition and deserts of every applicant for relief. Among the Christian guardians the inquiry is a mockery; and the relief is only bread enough to keep the applicant alive till his turn comes round again. Sick, he finds a difficulty in getting advice, and almost the impossibility of procuring the medicine he is ordered. The parish cannot give him a bed in an hospital; but he may reach the workhouse infirmary, and, as a preliminary, break up his home. Or, he may set forth begging among the private charities—to fall presently into the ranks of the professional ticket-hunters.

I have read diligently both sides of the question in regard to the asylums which are to grow, at enormous cost, in or near London, and I am only more firmly convinced than I was before Mr. Goschen's bill was debated, that you are on the high road to deeper mischief, unless while these barracks are building you reform the Poor Law root and branch. Every home the law breaks up spreads new pauperism. The wise Jews, imitating our prudent and thoughtfully methodical neighbors, have made their medical staff for the poor perfect, and have helped the doctor with a kitchen as well as a pharmacy. Their vigor has been in the direction of home; and so has that of M. Husson's department. The striving of the French poor administrators has been to keep the old people in the home as well; not to mass them in the asylums. The workhouse is the mistake in the English Poor-law system; and we will not see it, nor be at the trouble of mastering the details of a better system—cheaper and kindlier,—although it is flourishing within ten hours of Whitechapel, and serves the poor of a vast metropolis without a workhouse, and without oppressing those who are only just removed from a condition of want, with poor-rates.

Consider the case of the poor Paris workman who is disabled by disease. The Maison de Secours is at hand. The doctor reaches him, and leaves a record of the hour of each visit and the condition of the patient. He is followed by inspector and visitor, who attend to the poor man's wants, and help the family. It is cheapest to get the man to work again as soon as possible, and to keep the home together. When his case requires particular treatment or peculiar skill, he is removed by the Poor-law officers, upon a decent covered litter, to the special hospital which treats his disease. The home relief, the attendance, medicines, the hospital, and the carriage thither—nay, the convalescent hospital at Vincennes for fresh air, are all harmoniously and cheaply worked together, through (1) the Maison de Secours; (2) the Arrondissement Bureau; and (3) the General or Central Bureau.

Consider the case of the poor sick workman in London. His family are invited into the workhouse to begin with. If they hold together—some six or seven in a room,—he is sparingly attended; his supply of medicines is dubious; no volunteer visitor keeps a rigorous superintendence over the Poor-law doings; his family starve on parish bread under his eyes, goaded incessantly with invitations to give up independence and go into the house, and become regular paupers, leaving an inheritance of workhouse morality to their children. Consider the case of the Jewish workman again, who in the midst of the atrocious and costly barbarism to which the poor Christian of Whitechapel is subjected, is well nourished and attended in sickness, and sees his wife and children cared for until he can be the bread-winner again. The Rothschilds, who have graced their wealth always, both in London and Paris, with a most chivalrous and open-handed service of the poor—service of thought and time, as well as of money—have been workers in this direction. But Gwydyr House is suffering, I fear, from *mortar* on the brain.

News, Items, Medical Facts, &c.

A Proper Acknowledgment.—Cholera reigued very severely at Ancona in 1836, 1855, and 1865: the medical profession did its duty, and no less than eleven medical men perished during these epidemics. On the 23d of March last, a commemorative tombstone was unveiled in the cemetery of Ancona, in the presence of the delegates of various medical societies, and a great concourse of people. The names of the eleven victims are engraved on the mournful stone. Powerful and very touching speeches were delivered, and the ceremony passed off with becoming impressiveness. This mark of respect had been organized by the Medical Mutual Association. With regard to the latter circumstance, the editor of *L'Imparziale* justly remarks that this acknowledgment of generous self-denial on the part of courageous medical men ought to have emanated from the general population of Ancona, who reaped the benefit of this sad loss of life, and not from the professional brethren of the departed

An Unusual Inquiry.—Bordeaux has a very useful Lock Hospital, of which M. Venot, a specialist of great repute. is the surgeon. M. Venot's views as to certain late symptoms in prostitutes—viz., various destructions or thickenings of parts originating in syphilis, which have lost their specificity—are peculiar. He considers girls found with such symptoms to be harmless. The lay committee of the hospital have expressed some anxiety on the subject, and they have appointed M. Jeannel, head pharmacien of the military hospital, to inquire into M. Venot's practice. M. Jeannel has accepted this rather invidious task.

A Brave Surgeon.—At Turin, on May 30th last, a five-storied house was giving way, when it was reported that a little girl had been left inside. M. Panizza, a well-known surgeon, hearing of the circumstance, rushed into the house to rescue the child, but it was too late. Both the generous Panizza and the child were buried in the ruins. Such an act does great honor to humanity and our profession. We are glad to perceive, says the *Imparziale* of Florence, that the people of Turin are providing for the family of this unselfish and courageous man.

Aristocratic Cruelty.—In an account of some recent international, pigeon-shooting a reporter states that the Prince of Wales looked well, and "evidently enjoyed the skilful and harmless pastime." All that we question in this statement is the applicability of the epithet "harmless" to a pastime in which 242 birds out of 353 were killed. Even among the 111 who got away there must have been a good many who had reason to consider that, in regard at least to themselves, the proceedings had not been altogether "harmless."—*Pall Mall Gazette*.

Illness of the Duchess of Aosta.—The Italian papers state that her Highness has suffered from miliary fever, and that she is, happily, on the way to recovery. *L'Imparziale*, of Florence, is, however, astonished that the health of the Princess should be entrusted to men who, though certainly highly distinguished, are nevertheless principally noted as surgeons; whilst no consultation has been held with any of the eminent physicians of whom the University of Florence is justly proud.

The Prussian Students.—It would appear that the students of the various faculties are either much oppressed or are somewhat unruly. They have protested against interference on the part of the authorities and the police, and claim the right of forming a fund for students of limited means, the right of meeting, &c. The protesting document is couched in the most energetic language.

Death of Dr. Van Roosbroeck.—This eminent ophthalmologist has just died at Ghent. He was occulist to the King, and professor at the Faculty. The deceased was particularly noted for his vast medical knowledge, and was not cramped by the specialty in which he was eminently skilful.

The Faculty of the Medical Department of the University of Louisiana have manifested their esteem and admiration for their late professor, Dr. Thomas Hunt, by placing in their principal hall a marble tablet commemorative of his services and abilities.

Homœopathy in Paris.—The Homœopathic Society of France have decided that an hospital shall be founded in Paris in which the practice of homœopathy shall have free scope. A public subscription is to defray the expenses.

According to latest advices, isolated cases of yellow fever are reported from all parts of Peru, but at Callao and Lima the epidemic was raging violently. A few cases had also occurred at Fort de France, Martinique.

PUBLISHED BY

Wm. C. HERALD, Agent, 32 BEEKMAN ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

JAMES G. WAKLEY, M.D., M.R.C.S., EDITOR.

PUBLISHED MONTHLY.

No. 11. NEW YORK, NOVEMBER, 1869.

Lectures
ON
ORTHOPÆDIC SURGERY.

Delivered at St. George's Hospital, 1868.

By Bernard E. Brodhurst, F.R.C.S.

Lecturer on Orthopædic Surgery at the Hospital.

LECTURE X.

ON DISTORTIONS OF THE TRUNK AND NECK.

Angular curvature of the spine.—Caries of the spine very frequently occurs as a result of inflammation, whether of a strumous or a rheumatic character. Disease of the spine is, however, essentially of a scrofulous nature. Any portion of the spinal column may be affected by this formidable disease, but the dorsal and the cervical portions of the spine are in children attacked more frequently than the lumbar portion. In more advanced life disease is not unfrequently of a mixed character—rheumatism in a strumous diathesis; and inflammation then is sometimes found to extend from the sacro-iliac articulation, and to affect the lumbar vertebræ.

Caries of the spine may commence at any period of life, for no age is exempt, and any portion of the spinal column may become diseased; but this is especially a disease of childhood; it partakes essentially of a scrofulous character, and because the dorsal region is the most extensive and the most exposed to injury, it is more frequently the seat of caries and angular curvature than either of the other regions. In its incipient stage, disease of the spine is not unfrequently overlooked, whether in the child or in the adult; sometimes it is styled neuralgia, or, again, pain is supposed to arise from pulmonary disease. And it is not alone in its incipient stage that disease is overlooked, for it is not uncommon to see that disease has progressed so far as to have resulted in deformity without caries of the spine being even suspected.

In this form of disease the anterior portion of the spinal column—namely, the bodies of the vertebræ, with the intervertebral substances and the intervertebral ligaments—is alone liable or to become carious. The posterior segment, consisting of the spinous, transverse and oblique processes, with the pedicles and arches, shows no disposition to pass into a similar state of disease.

Disease of the spine is, for the most part, the result of injury, through which inflammatory action is set up and extends to the intervertebral substances and to the bodies of the vertebræ. In this respect the progress of the affection does not materially differ from that which is observed to take place in other articulations. In all strumous affections of bone tubercular matter is deposited in the medullary cavities and in the cancellous structure of the bones; but the bodies of the vertebræ, from their spongy texture, and also by reason of the accidents to which the spinal column is liable, are in a special manner prone to this condition of disease—scrofulous caries.

In an early stage of the disease one spot in the course of the vertebral column is more or less acutely sensitive. After a time the character of the pain is altered, and a slight projection of a spinous process may be observed, with, perhaps, some tumefaction around the seat of the disease. Caries may then be said to be established. The structure of one or more vertebræ having become disorganised, a gap of greater or less extent, according to the number of bodies of vertebræ involved in the disease, is formed, and the upper portion of the column falls forward. That vertebra whose body has been most excavated becomes the most prominent, and its spinous process forms the apex of the angular projection. The deformity which ensues is greater in the dorsal, and least in the lumbar region. The greatest deformity from an equal amount of destruction occurs in the upper dorsal region. This is due to the shape of the vertebræ as well as to the formation of the vertebral curves; for the bodies of the dorsal vertebræ and the intervertebral substances of this region are thicker behind than in front, or the reverse of that which obtains in the cervical and lumbar regions, and the dorsal spine presents its convexity backwards; and, therefore, deformity from these several causes is necessarily greater in the dorsal than in the cervical or lumbar regions. But, also, the dorsal spines are long and superficial, and thus any increase of the curve increases the prominence of the spinous processes, and loss of substance, even to a smaller extent than in either of the other spinal regions, produces greater deformity in the dorsal region, and immediately occasions an angular appearance of the spine. On the other hand, in the lumbar region, the vertebræ, presenting a concavity backwards, with short spinous processes which are buried among powerful muscles while their bodies are broad and deep, allow of considerable loss of substance, with comparatively small deformity.

When disease is established in the cervical region, the head is somewhat thrown back, and is more or less fixed; the muscles are thrown into action to prevent motion and to avoid pain, and the head seems to subside on to the shoulders. Thus the space is contracted between the occiput and the back. This is especially observable in children; but it is also to be noticed in adults. Also, the muscles of one side of the neck are sometimes more contracted than on the opposite side, and the head is in consequence inclined to one side or the other, as in wry-neck. Such is the case with Caroline S——, in Princess's ward, who was placed under my care by Mr. Henry Lee, that I might bring her case under your notice. This patient, aged forty-three, was admitted with her head firmly fixed and inclined to the right side; the ear was drawn towards the right shoulder, and the chin was projected in the opposite direction. The muscles on both sides of the neck were rigid, but they were much more contracted on the right than on the left side. Such, then, was the condition of the head when the patient entered the hospital. After the head had been efficiently supported for some few days, the muscles became relaxed, and the wry-neck had disappeared; for the irritation had ceased.

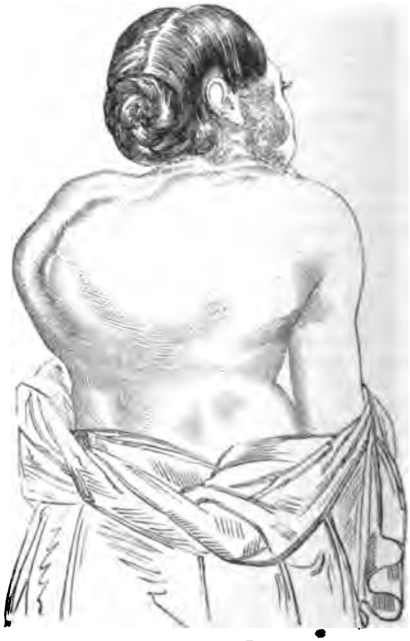
Pain is a very variable symptom of this disease. When the ligaments are first affected, pain is acute; every movement causes pain. At length less pain is experienced, and finally it almost disappears. Pain, however, may be excited by pressure on the diseased bone, or by percussion, until anchylosis is complete. To prevent the pain which is caused by motion, the child will move about with the hands resting on the thighs or on the knees; thus to diminish the friction which is occasioned by one portion of the spinal column moving upon the other. At the same time the muscles of the back are thrown into action to fix as much as possible the affected parts, thus to prevent motion and the pain which is dependent on motion; in the same manner as is observed in all diseases of joints. The muscular rigidity takes place to a much greater extent in the cervical than in the other regions of the spine; and for this reason, that the flexibility of the cervical portion is much greater than that of the rest of the spine.

As the substance of one or more of the bodies of the vertebræ is removed by caries, the upper portion of the column falls forward upon the lower. This deplacement occurs in consequence of the chasm which has been produced in the column; so that the upper portion may be said to be left unsupported, and it therefore falls forward. Such muscles as the psoas, however, assist this action, when they become irritated. Although the muscles of the back are rigid, and tend to fix the spinal column so long as pain on motion exists, and before the chasm above alluded to is produced, they become atrophied in an advanced stage of the disease, and when displacement of the column forward ensues.

The amount of angular deformity which takes place depends, first, on the amount of destruction of the bodies of the vetebræ, and, secondly, on the position of the disease. But the extent of disease, and consequently the amount of deformity, depend on the treatment to which the patient may have been subjected. It is possible that little or no apparent deformity shall remain, even when the upper dorsal region has been affected. Disease must then have been grappled with, however, at an early stage, and perseveringly.

When several vertebræ become affected, so that the chasm in the column which results is considerable, an angle more or less acute is produced, and the canal itself may be encroached upon. This encroachment may occasion pressure on the cord; which, if it take place suddenly or increase rapidly, will be followed by paralysis. When, however, deformity increases slowly, the cord becomes so tolerant of pressure that perhaps loss of power will not ensue. In these cases, partial paralysis is apt to occur when motion is permitted; and power is restored by continued rest of the body. Emma M——, in Drummond ward, is an instance in point. In this case disease is limited to the lower dorsal region, and there is very slight displacement; so little, indeed, that when she is lying down scarcely any projection of the spinous processes can be observed. It is, however, conspicuous when she stands up. It is not possible to keep this patient always lying down; she will occasionally get out of bed. And mark what happens. Violent twitchings of the lower limbs follow these escapades, and they last, perhaps with acute pain, for twenty-four or more hours, when they cease, and the limbs become motionless and flexed upon the trunk; then gradually the muscles relax, and the limbs resume their normal condition: motion and sensation are again perfectly restored. This is not altogether an ordinary case, but I allude to it as it is before you, inasmuch as it illustrates certain points in the course of spinal disease.

FIG. 29.



Again, in the figure which I now show you (29) the bodies of at least five or six vertebræ have been entirely destroyed. But notwithstanding the great deformity which has been produced, symptoms of compression of the cord have never been experienced.

For the most part, when destruction of the bodies of the vertebræ has taken place rapidly, paraplegia will be more or less complete when movements of the body are permitted; but when destruction has taken place slowly, little or no muscular weakness may result. Whenever motion is allowed in disease of the spine, a sense of weakness or pain is experienced at the seat of disease; and this is always increased by percussion or by firm pressure. Somewhat later, painful twitchings are produced by movements of the trunk, and afterwards sensation becomes somewhat blunted. Tenderness begins to be felt in the course of the psoas muscle, or otherwise in the loins or neck, according to the seat of disease; and presently a slight swelling, communicating a doughy sensation, may be perceived, which increases according to circumstances to larger dimensions.

When paralysis occurs, motion is first lost, and subsequently sensation; and it occurs thus for the obvious reason that the anterior columns of the cord, which give off the nerves of motion, are more subjected to pressure and irritation, lying, as they do, more immediately in contact with the carious bone than the posterior columns, from which the nerves of sensation are given off. Paralysis is not, however, as I have already shown, in proportion to the amount of deformity, but rather in proportion to the rapidity of the change which is effected.

When disease occurs in the lumbar region, it is sometimes attended with considerable pain, but rarely with much deformity. In the dorsal region, the great length of the spinous processes, and the forward curve which this portion of the column assumes, tend to make any projection of the dorsal spine remarkable. The thorax undergoes considerable change of form: the sternum is rendered prominent, while the ribs are compressed laterally, and project backwards together with the vertebræ. In such cases, the least hurry or excitement causes palpitation.

When disease occurs in the cervical region, the head may be held forward, or it may be turned to one side, and so be fixed, as in wry-neck. And, indeed, disease in this region may so closely simulate ordinary wry-neck that an error of diagnosis may easily be committed. Generally, however, the head falls back, and the child is unable to raise it. In these cases, any movements of the head, especially sudden or rotatory movements, cause excruciating pain; and even sudden death has been occasioned by such movements—namely, where the atlas and the axis were involved in the disease. Under such circumstances the spinal cord in its specially vital portion may be crushed between the atlas and the odontoid process. Occasionally, two portions of the spinal column are simultaneously attacked with caries. Such cases are rare, however, and their treatment differs in nothing from others which are more simple.

Spinal abscess, when it forms in the cervical region, presents itself between the muscles at the side of the neck, or the pus may burrow somewhat lower down, and the abscess will probably point opposite to the dorsal vertebræ. And when the dorsal vertebræ are affected with disease, the pus either gravitates in the course of the posterior mediastinum, and passes along the psoas muscle, to point in the groin, whence it may burrow even to the knee; or the abscess, being deflected backwards, will appear in the loin, when it is known as lumbar abscess. Again, the pus may pass along an intercostal space, and come to the surface on the side of the thorax; or it may burst into the intestine, as, for instance, into the sigmoid flexure of the colon, and be evacuated per rectum. Under such circumstances I have known the patient to sink in the course of some few hours. Insensibility may ensue immediately on such a discharge taking place, and death may follow in two or three hours after. Instead of finding its way beneath Poupart's ligament, the pus may be arrested in its course, and collect in the iliac fossa, where it is sometimes found in large quantities. The effects now detailed are the results of motion. It is obvious, therefore, how they should be prevented.

The *treatment* of disease of the spine does not differ materially from that which is indicated for scrofulous joints generally—namely, rest of the part affected.

A limb may be kept at rest by means of a suitable splint, and when the joint is thus secured, the patient can move about without fear of injury, so long as the limb is not used. It is not so, however, with the spine. Only the posterior surface of the spine can be efficiently supported, and, therefore, the trunk cannot be perfectly fixed, and friction of the opposed surfaces of the carious bodies of the vertebræ prevented, except in the recumbent posture. This is the position, then, which should be constantly observed in disease of the spine. But this is not alone sufficient, for it is required to keep the trunk motionless, so that friction of the diseased surfaces shall be avoided. This can only be effected by means of a well-adapted splint, which shall grasp the pelvis and shoulders, and if necessary the neck and occiput. As a further precaution, the mattress on which the patient lies may be slightly hollowed to receive the splint. The most convenient couch for this purpose is a double inclined plane, by means of which the shoulders and knees may be gently raised or lowered at pleasure. Such movements add greatly to the comfort of the patient.

The supine position is preferable to the prone position, for it can be continued longer without movement, and is, therefore, more favorable to anchylosis. But whatever the posture may be, absolute rest in the recumbent position is an undoubted necessity. Professor Pirrie has put this point well. He says: "Rest of the diseased parts and the recumbent position, whether the body be prone or supine, are of the utmost importance from the very commencement of the disease, until a cure is effected by anchylosis."

The importance of this fact—rest in the recumbent position—cannot be too much insisted on. Without it, all other treatment is useless; but with it I have never known an abscess to form. The time which is required for this absolute rest depends on the duration of disease: probably eight or ten months may be sufficient at an early period; but the necessary time will increase in proportion as disease has advanced. Without rest in the recumbent position, anchylosis can never take place.

Anchylosis, then, is the cure to be effected. And when this has taken place, a portable instrument may be worn to support the spine and remove the weight of the head and shoulders. Now that the upright position is again assumed, two incurvations of the spine will be observed—one above and the other below the seat of disease. These are essential for the equilibrium of the body; and they can only be formed after anchylosis has taken place. Thus these curves become proofs that anchylosis is more or less complete.

There is a spurious as well as a true anchylosis however; and this consists of ossific union in the course of the posterior surface of the spine, which leaves the spaces of the bodies gaping. This form of union is promoted by the prone couch; it is slender, and liable at any moment to yield.

When unfortunately, and as the result of motion and increased irritation, pus accumulates in such quantity that an abscess shows itself externally, whether in the groin, the loin, or elsewhere, it should never be allowed to break; but it should be opened when evacuation of the contents becomes absolutely necessary, through a small valvular opening. And thus tension may be removed by the withdrawal of a small quantity of matter, when the opening may be again closed. This operation may be repeated as it becomes necessary. Again, the contents of the sac may be evacuated, and a solution of carbolic acid may be injected. I prefer the latter mode of treatment; for the pus is then removed instead of being absorbed, and necessarily less danger attaches to such a course. Without motion, as has been already said, the abscess would not have formed. If motion be allowed after the contents of the abscess have been evacuated, it will again fill. Therefore, whether before the formation of abscess or after its evacuation, the rule for our guidance in these cases is one and indispensable--rest in the recumbent position.

Gentlemen, we have now completed together the course of lectures which, in the outset, I intended to deliver. I feel sure that, from the attention which you have paid to my lectures, the surgery of deformities will have been thoroughly comprehended; and that, when me meet in the orthopædic wards of the hospital, we shall be able to reduce to practice that which we have learnt.

◆

Clinical Lectures

ON

DISEASES OF THE CHEST.

Delivered at Charing-cross Hospital.

By Hyde Salter, M.D., F.R.S.,

Fellow of the Royal College of Physicians, Physician to Charing-cross Hospital, and Lecturer on The Principles and Practice of Medicine at its Medical School.

LECTURE II.

ON CASES ILLUSTRATING THE INFLUENCE OF CONVECTION IN DETERMINING THE SEAT OF CARDIAC MURMURS.

(Continued from October number—p. 521).

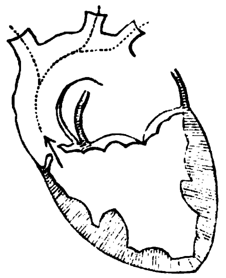
Case 2.—Samuel E——, aged thirty-one, a builder's laborer, was quite well up to four years ago, when he had rheumatic fever. His heart was not affected, and he recovered perfectly. Nearly two years ago he was seized with a similar attack; every joint of his body was affected, and this time his heart also. When he returned to his work he found himself incapable of any violent exertion, on account of the palpitation and breathlessness that it produced, and this has continuously increased ever since. For some time past, too, the palpitation has been much stronger, and he has suffered from it when quite still. Early in September he had what must be considered his third attack of rheumatic fever, and six weeks ago was admitted into this hospital. He had all the characteristic symptoms—the sweat, the smell, the joint affection. His heart was not the subject of any fresh or acute attack on this occasion, but went on just in the old way; and I think the foundation of all the mischief he suffers from was laid in the second attack. Immediately on his admission I put him on the quinine treatment, and in about a week he began to improve very much. He has gone on improving steadily ever since, as far as the rheumatic fever goes, and were it not for his heart he might ere this have left the hospital. When he was admitted he suffered from orthopnœa, being aroused from his sleep and obliged to jump up in bed with a choking breathlessness three or four times in the night. Lately this has gone off; he is, however, constantly troubled with palpitation, day and night; and if he walks quickly across the ward his heart is "all of a boil," and the beating so violent and the breathlessness so great that the continuance of exertion is impossible. Pulse 80, respiration 24, when sitting tranquilly.

Physical examination.—The first thing that strikes the eye on stripping the patient is the leaping of the arteries in every part of the body—carotids, subclavians, brachials,—raising the surface beneath which they lie with a heaving action, or, if more superficial, starting into a tortuous visibleness at each pulsation. The apex beat is seen to be beneath the sixth rib, two inches and a half below and to the left of the left nipple. On applying the hand over the subclavians and carotids, a distinct duplication or triplication of the impulse is felt; and on passing the hand to the aortic region, this vibration is found to have resolved itself into a distinct thrill, felt most distinctly in the spaces between the right second and third cartilages, close to the margin of the sternum—in fact, in the immediate neighborhood of the aortic valves. On listening over the base of the heart, a loud whiffing murmur is heard, taking the place of the second sound, loudest at the right margin of the sternum opposite the third cartilage. The first impression would be that there was no other murmur there, and therefore that there was simply aortic regurgitation, without any constriction or roughness. I found, however, subsequently, from a circumstance I shall mention presently, on listening to the subclavians and carotids, that there was in them a loud *systolic* murmur, clearly heard when the stethoscope was placed so lightly on the surface that the sound could not be caused by pressure. I felt sure, therefore, that this was an aortic murmur transmitted on into the arteries; and on going back to the situation of the aortic valves, I could distinctly convince myself of a systolic murmur, which I believe would unmistakably have asserted itself *as* a murmur if it had been followed by a clear second sound, but which was masked by the loud and conspicuous diastolic murmur immediately succeeding it. The existence of this systolic murmur would, I believe, in consequence of being thus masked, be overlooked by nineteen persons out of twenty listening with ordinary care. On listening at the apex, the first sound is found to be dull, but murmurless; but the diastolic murmur is distinctly audible, even at the extreme apex, below the sixth rib, nearly seven inches from its point of generation, and becomes clearer and clearer on passing upwards and to the right, till its point of maximum intensity is reached at the situation previously indicated. No murmur is audible in the aorta along the spine; but the natural systolic sound is plainly heard there, showing its exaggeration. There is no murmur audible in the brachials, but the duplicate or vibrating impulse is plainly felt in them.

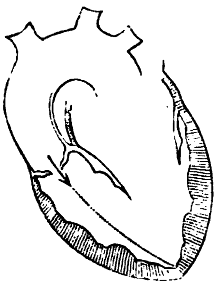
In one respect this case is like the first, inasmuch as there are two murmurs at one orifice transmitted in opposite directions, only these murmurs are at the aortic orifice instead of the mitral—the loud diastolic murmur carried by the regurgitating blood back into the ventricle, down to its very apex, and heard there, and the systolic murmur carried by the blood in its onward rush into the arteries, and felt and heard in them. But it differs from the former case, inasmuch as the duplicity of the murmurs at their point of generation was clearly, though not at first, made out.

You see in this diagram the different direction that the blood is taking, and therefore the different direction in which the bruit is propagated, in cases of systolic and diasystolic aortic murmur respectively. Fig. A represents the course the blood is taking in systolic aortic murmur (constrictive), and shows how, as it rushes into the aorta, it would carry the sound upwards and to the right, and thence on into the great vessels, and how it would convey it away from the ventricle. Fig. B shows the direction of the blood stream in diastolic aortic murmur (regurgitant); how it would flow back towards the apex along the inferior wall of the ventricle, and convey, therefore, the sound downwards and to the left, rendering it audible at the lower sternum and to the very apex itself. It shows, too, how such a murmur might be inaudible over the aorta though generated at its base, the blood, as it rushes back from the vessel, carrying the sound away.

A



B



There are two interesting points about this case. First, that the systolic murmur appeared to be so much louder along the course of the arteries than at the aortic orifice, where it was developed. It was this very fact, as I have just mentioned, that led to the detection of the systolic element of sound at the root of the aorta. Whether the murmur was *really* louder along the arteries than over the point of its generation, I will not say; if not, its comparative inaudibleness over the aortic orifice is a proof of the power of a loud sound to mask a feeble one succeeding it—just as in feeling two unequal pulses simultaneously, the strong one makes the weak one almost imperceptible. If it was really louder in the arteries, then its obscurity over the aorta must be attributed to the greater depth at which that vessel lies than the arteries in which the sound was more clearly heard. In the second place, the fact that led me to search for a systolic murmur at all is interesting. One of you, standing by the patient's bed when I was examining him, and happening to put his hand on the man's chest, called my attention to the strong thrill that was felt at the upper part of the sternum. On applying my hand, I was equally struck with it; but what was my astonishment to find that the thrill was not diastolic, as I expected it to be, but systolic! Now here was a marvel—a loud diastolic murmur without a thrill, and a strong systolic thrill without an appreciable murmur. Until I felt the thrill, and found it to be systolic, I had no suspicion of a systolic murmur; and it was only by detecting it in the arteries, where it was unmasked by the diastolic murmur, and gradually working back to the aortic orifice, that I was able, as I have already stated, to convince myself of its existence in this situation.

This unequality of conduction of sonorous vibrations and vibrations perceptible by the hand is merely one example of what we often meet with in other cases; it is the same as the want of proportion that so frequently exists between the amount of vocal resonance and vocal fremitus. What is the explanation of it? Why should not the thrill be always proportioned to the sound? I think the explanation is to be found, in part, in the *size* of the vibrations: I think the large and distinct vibrations that characterise the deeper sounds impart more thrill than those that are higher. It is only the vibrations of the largest pipes of an organ, furnishing the lowest notes, that produce that peculiar thrilling tremor in the walls of a church that we sometimes feel. The bass male voice, too, however suppressed, produces far more vocal fremitus than the higher female one, even though raised. As far as this case goes, it would favor Dr. Walshe's view, that the murmurs the most accompanied with thrill are those produced by the contraction of the ventricle, the reason for which he believes to be, that in other murmurs the blood is not sent with sufficient force to generate a thrill. I have, however, lately seen two or three cases of presystolic murmur, in which the thrill perceptible by the hand was very strong—as strong, I think, as I have ever felt. Now, here the murmur is produced by the contraction of the auricle, and the presence of the thrill is therefore inconsistent with Dr. Walshe's view.

Case 3.—There is another case in the hospital, that of George C——, of which the essential characters are just the same as in E——'s: a loud diastolic murmur, of musical, rasping character, heard at the base and thence down to the apex, and a soft systolic murmur, heard also at the base and along the great vessels; in other words, a double aortic murmur, the two sounds being propagated in opposite directions, according to the direction of the blood-stream at the time; the systolic sound, moreover, being almost masked by the louder diastolic murmur immediately succeeding it. The case is so exactly the counterpart of the other that I need say nothing more about it.

Case 4.—I have just seen an interesting case, in private practice, well illustrating the effect of convection in localising cardiac murmurs, and transferring them from one place to another. It was that of a gentleman, aged twenty-six, who had rheumatic fever eight years ago, and has had it four times since—the last time two years ago. The heart was affected on the first occasion, and well-marked symptoms of heart mischief have existed from that time. On the subsequent occasions it apparently escaped. On examining the heart, I found at the apex a most distinct and conspicuous diastolic murmur following a natural first sound. On going to the base, where of course I expected to hear it still plainer, I found no murmur at all: a sharp, strong first sound succeeded by a dull and ill-defined second sound, *but not a trace of murmur.* I thoroughly explored the whole of the base, and examined it again and again, but always with the same result. There could be no doubt, I think, that the murmur I heard at the apex indicated aortic regurgitation: I do not see what else it could have been. It was distinctly and sharply diastolic in time, and not presystolic. Now I think there is only one thing that a diastolic endocardial murmur can indicate, at whatever point it is heard: it must be caused by blood entering a ventricle (right or left) at one of its orifices, either backwards from the artery, or forwards from the auricle. Experience tells us that a murmur generated by blood entering the ventricle from the auricle is never diastolic in time—is always presystolic; never at the time of passive filling of the ventricle, but always at the time of its active filling by the auricular contraction. There remains therefore nothing but the reflux of blood through the aortic or pulmonic orifice as the sole possible agent of an endocardial diastolic murmur. We may entirely set aside the idea of this murmur being pericardial: the character of the sound, its singleness and diastolic period, and the absence of any rheumatism or acute symptoms for two years, all forbid the idea. Moreover, there was well-marked regurgitant pulse. It was quite certain, then, that the murmur, so plain at the apex and inaudible at the base, was due to aortic regurgitation; that is, that the stream of blood flowing down towards the apex carried thither the sonorous vibrations of which conduction failed to give any evidence in the immediate neighborhood of their production. Here, then, we had a basic murmur inaudible at the base, and heard only at the apex. How easy would it be, unless carefully checking the time of its occurrence, to mistake such a murmur for an apex murmur; and how well does such a case illustrate the potency of convectiou, and the importance of recognising its influence on the localisation of morbid heart sounds.

The following case, which came under our observation last December, illustrates, as I believe, the same point—namely, an aortic regurgitant murmur inaudible over the aortic valves, but audible at the apex.

Case 5.—Harriet S——, aged forty-four, short, very stout, and with a large abdominal tumour, was suddenly seized, when running after her husband, who is blind, and whom she had missed in the street, with an agony in the chest passing through to the back, and extending to the left side; it was accompanied with a feeling of compression, as if the chest was in a vice, a complete stoppage of the breathing, and a sense of impending death from suffocation. She became unconscious, and fell down. On recovering her consciousness she found the agony through her chest continuing, and the same oppression of the breathing. The accident happened at half-past three, and so breathless did she remain that she was not able to get out a single sentence till ten at night: all this time the agony was extreme, but at ten o'clock it a little abated, and the dyspnœa subsided sufficiently to allow her to speak. On falling, she fell with her chest against the kerbstone, and almost immediately after the fall coughed up nearly half a pint of blood. Ever since the first seizure she has been unable to take the slightest exertion without bringing on the same sensation. Only last Sunday, when, coming out of church, she took a few quick steps, as it was raining, she felt all the same symptoms—her breath was gone, she was unable to speak, and would haxe fallen unless her husband had supported her. Any mental agitation throws her into a similar paroxysm. On many nights since the first seizure she has been attacked in her sleep, and has been unable to recover herself for some moments. All her attacks are characterized by the same three elements—the agony through the chest, the feeling of impending death, and the breathlessness. Previous to the accident she never had any such symptoms in her life, and in spite of her stoutness could walk as nimbly and actively as anybody; from that time all exertion has been impossible.

On examining the heart, I found the sounds at the base tolerably clear, with only the slightest possible blowing at the systole, heard best at mid-sternum opposite the third cartilage, less distinct at either cartilage. There was, however, I found, a very distinct diastolic murmur (not presystolic) heard at left apex; not at the right, nor over the right ventricle. On a subsequent occasion I have the following entry in my note-book:—"I hear the systolic basic murmur louder a little, I think, at the right margin of the sternum than at the left: not a trace of a diastolic. At the apex, however, a distinct, clear, prolonged diastolic murmur (distinctly diastolic, as before, not presystolic). I find this, however, very distinct at the lower sternum; I am not sure that it is not more distinct there than at the true left apex, though I can hear the sound quite plainly to the axillary side of the apex."

I cannot but believe that this was a case of rupture of the aortic valves; it was evidently a case of some sudden catastrophe happening to the heart in a woman of unusual obesity, weighted moreover with an abdominal tumour, under the stress of strong emotion, and making violent exertion—just such a state as rupture of a valve would be likely to occur in. She never had cardiac symptoms before; she has never been free from them since. Now, if the case was one of rupture of the aortic valves, regurgitation, and therefore a regurgitant murmur, would necessarily follow. There is, moreover, the same reason for saying that an apex murmur, distinctly diastolic and not presystolic, can mean nothing else than aortic regurgitation, as in the last-mentioned case. Here, then, is another example of a murmur basic in the seat of its development, but inaudible at the base and revealing itself at the apex.

Case 6.—An equally interesting case has just left the hospital, furnishing a curious violation of the laws of conduction and convection which I have been endeavoring to explain and illustrate to you. Jessie H—— was admitted with acute articular rheumatism on Feb. 15th, and on her admission a systolic basic murmur, audible along the great vessels, was all that was heard. On the 25th the following entry was made:—"A double bruit has for the last few days been audible at the base. At first it was accompanied with a flat, moist, clicking sound, and there was some doubt as to whether it was an endocardial or pericardial sound but now it has acquired more of a distinctly blowing character, and seems to be undoubtedly endocardial." On March 1st the following note was added:—"The double aortic murmur remains the same. In examining the heart to-day this singular fact is noticed, that at the base no second sound is audible, but at the apex the second sound is distinctly heard."

There is a case, in one point so analogous to this, in Dr. Walshe's work on Diseases of the Heart, that I cannot forbear reading it to you. It is in the Appendix, and is headed "Diastolic Basic Thrill." He says: "I have within the last few days seen, with Dr. Reynolds, a case of very highly-marked diastolic basic murmur, in which, although the patient cannot be said to be positively anæmic, a well-defined thrill attends the reflux through the aortic orifice. This diastolic thrill is better conducted upwards, above the heart's base, than, as the connected murmur, downwards towards the ensiform cartilage. It is not unworthy of note, that though the murmur is extremely loud at the base, a perfectly well-defined second sound, without murmur, is heard at the left apex."

Now, there are in this singular case two points of interest: one that I can understand, and one that I must say I cannot. I can understand why convection should bring the basic murmur down towards the ensiform cartilage, and leave the thrill, with which it was connected, at the base, conducted to the chest-wall in the immediate neighborhood of its production. But I cannot understand how, with a regurgitant murmur, and the blood flowing down from the aorta into the ventricle towards the apex, a well-defined second sound should be heard there without murmur.

It is in this, to me, unintelligible part that this case resembles that of Jessie H——. It is just the reverse of what I should have thought the laws of convection would have brought about, and just the reverse of what they did bring about in the case of W——, which I have already related to you, in the case of my private patient, and in the case of Harriet S——. In the case of W——, if you remember, which was one of mitral disease, a natural first sound was heard at the apex unattended by murmur, while a regurgitant murmur, unattended by the natural element of the first sound, was heard in the axilla and back—that is, the natural valve-sound was heard at the part *from* which the blood was flowing, while the murmur was heard near the cavity *to* which it was flowing. In this case of Dr. Walshe's, and in that of Jessie H——, the murmur was heard at the part *from* which the blood was flowing (the aortic orifice), and the natural sound at that *to* which it was flowing (the ventricle).

If the murmur had been heard at the base *together with* the second sound, and the murmur *alone* at the apex without any second-sound element, I could have understood it; because I could have understood that the refluent blood might have carried the murmur to the apex by convection, though conduction might have failed to transmit so far the shock of the closing aortic valves.

The only explanation that I can imagine of it is, that the regurgitating stream was so slender that it did not reach the apex—that it was a mere fine squirting, through a narrow chink, of a score of drops or so, and that, perhaps, in a direction not towards the apex,—and thus that convection was not engaged at all. The fact that the closure of the valves was sufficiently good to produce a natural second sound, audible at the apex, is almost a proof of this.

Is it possible that the regurgitation in these cases was through the pulmonic valves, and not the aortic? In Dr. Walshe's case, the fact that the murmur was audible at the lower sternum, and not at the left apex, would be compatible with such a supposition, great as are the probabilities against it in other respects. In the case of Jessie H——, I was unable, from the patient's suddenly wishing to leave the hospital, to make any further investigations.

What, gentlemen, I wish to impress upon you by this lecture, and by the case to which I have directed your attention, is that the seat of a cardiac murmur is often displaced to a considerable distance from the seat of its generation, and that a frequent cause of this displacement is the agency of convection. Why a murmur should be so transferred in one instance and not in another, it is difficult to say. I find it at present *impossible* to say. The whole subject is involved in difficulty. The daily practice of critical auscultation reveals anomalies in cardiac murmurs that suggest interesting speculation at every step. Doubtless there are other factors concerned in these irregularities besides convection, involving, perhaps, anatomical considerations or peculiarities of morbid changes in individual cases. One of these days we may become as familiar with the law of these aberrant cases as we now are with that of what may be called normal murmurs. At some future time I hope to treat the whole subject of the Localisation of Cardiac Murmurs in a broader and more general way. In the meantime, you must accept these remarks as a contribution, as far as convection goes, towards such an object.

◆

Clinical Lectures

DELIVERED AT

THE ROYAL LONDON OPTHALMIC HOSPITAL, MOORFIELDS,

By J. Soelberg Wells,

Professor of Ophthalmology in King's College, Ophthalmic Surgeon to King's College Hospital, and Assistant-Surgeon to the Royal London Ophthalmic Hospital.

LECTURE I.

OPHTHALMIA NEONATORUM.

Gentlemen,—The ophthalmia of new-born infants is an important disease, with the symptoms and treatment of which all surgeons should be thoroughly conversant. If skilfully and judiciously treated, it may, as a rule, be speedily cured; whereas neglect or ignorance on the part of the medical attendant but too frequently leads to the worst consequences, perhaps even to the loss of both eyes.

Before introducing to your notice some patients to illustrate various symptoms of this opthalmia and its sequelæ, I will very briefly sketch the leading features of the symptoms of this disease, its complications, and the treatment which is to be adopted. Its intensity varies much. In the milder cases, the inflammation only assumes the character of slight catarrhal ophthalmia. The lids are somewhat swollen, red, and œdematous; the palpebral and ocular conjunctiva injected; and there is a slight muco-purulent discharge. But in the severer forms the symptoms are very different. The lids are very red and swollen, the upper eyelid hanging down in a heavy fold. When the lids are everted and the discharge is wiped away, the conjunctiva is found to be very vascular, swollen, and succulent, and its papillæ very prominent. There is often great chemosis round the cornea. The edges of the lids become sore and excoriated, and the lashes glued and matted together by the discharge. The latter is thick, yellow, creamy, and perhaps so copious that it oozes out between the lids, and flows over the cheek; it is sometimes tinged with blood. On account of the laxity of the tissues, the swelling of the lids and conjunctiva is often very great, even in the milder cases, and perhaps quite disproportionate to the severity of the disease. Instead of being soft and doughy, the lids are sometimes hard and stiff, the conjunctiva pale and yellowish-grey, and the discharge scanty, thin, flaky, and somewhat membranous. This condition, to which Wecker gives the name of cyanosis conjunctivæ, is due to a great retardation in the circulation of the lids.

As the principal danger of the disease is the implication of the cornea, the condition of the latter should be frequently and carefully ascertained. At first there may only be a slight haze or steaminess of the cornea, or a more dense infiltration, which may pass over into a ulcer. The infiltration may gradually diminish in thickness, and be absorbed, leaving finally no trace behind it; but if it be dense and extensive, it may give rise to a permanent thick opacity. The ulcers may appear near the periphery or the centre of the cornea, and remain superficial, or may increase in depth and circumference, and lead to perforation of the cornea, thus giving rise to certain complications which vary in gravity and danger according to the extent of the perforation. These complications are—1, anterior synechia; 2, prolapse of the iris; 3, central capsular cataract; 4, displacement or obliteration of the pupil; 5, anterior staphyloma; 6, if the perforation is very extensive or the cornea sloughs, more or less of the contents of the eyeball are evacuated, and the globe generally shrinks and atrophies, or general inflammation of the eyeball (panophthalmitis) first ensues. Iritis may also supervene upon the affection of the cornea.

The disease is generally due to contagion, produced by gonorrhœa, leucorrhœa, or some other vaginal discharge. Both the mothers of the patients who are here to-day were suffering from leucorrhœa at the time of confinement. Sometimes the sponges or cloths used for washing the child are the carriers of the contagion. External irritants, such as exposure of the eyes to cold, bright light, dust, &c., are also a frequent cause. If the disease is due to contagion, the primary symptoms manifest themselves within the first two or three days; if to external irritants, three or four weeks may elapse before their appearance.

The prognosis is, as a rule, favorable, more especially if the disease is mild in character, and is seen at the very outset; if the cornea is not affected and if proper care and treatment can be enforced.

The first patient, J. B——, aged nine weeks, presents a good illustration of one of the complications to which ophthalmia neonatorum may give rise—viz., anterior synechia. Two days after birth, the first symptoms of opthalmia presented themselves, for which he was treated by the surgeon in attendance. Last week he was brought here to me, on account of the corneal opacity in the right eye, the ophthalmia having, in the left, run its course without leaving any trace behind. But in the right eye you observe an opacity near the centre of the cornea, towards which a portion of the iris is drawn up, and to which it is adherent, the pupil not being circular, but somewhat displaced in the same direction. In the very centre of the opacity there is a small black speck, which is due to the lodgment of a minute portion of the iris in the perforation. The adhesion of the iris to the cornea is termed anterior synechia, and is thus produced: When an ulcer perforates the cornea the aqueous humor flows off, the iris falls forward, and a portion of it becomes glued to the bottom of the ulcer by the lymph which is effused. The pupil is more or less displaced, or may be partially or wholly implicated in the adhesion. If the perforation is quite central, the lens will come in contact with the bottom of the ulcer, and an interior capsular cataract may thus result. The latter condition is well shown in the second patient, who has also just recovered from ophthalmia. .Here you notice in each eye a minute central opacity of the cornea, and, accurately corresponding to this, a very small white dot on the centre of the anterior capsule. Anterior capsular cataract is almost invariably produced in the following manner:—When a minute central ulcer of the cornea perforates, the aqueous escapes, the iris and lens falls forward against the cornea, plastic lpmph is effused into the bottom of the ulcer, and a small nodule of this is deposited on the centre of the anterior capsule, which alone remains uncovered, as the pupil contracts when the aqueous flows off. The nutrition of the lens is impaired near the deposit of lymph, so that its superficial layers here become somewhat opaque; hence, even although the lymph may afterwards become absorbed, yet a central opacity remains behind. In fact, the capsule has always been found to be transparent. The ulcer of the cornea heals, the aqueous humor reaccumulates and the iris and lens recede. This causes the adhesion between the capsule and the cornea to be torn through, but the opacity on the centre of the capsule remains. Now, should the cornea subsequently become transparent, the origin of the anterior capsular cataract may be unsuspected. But on careful examination with the oblique illumination, we can often discover a faint central corneal opacity, just indicating the seat of the original ulcer. When the opacity on the capsule is prominent and sugar-loafed, it is called pyramidal cataract. Mr. Hutchinson thinks "that the mere proximity of the inflammatory action on the surface of the conjunctiva and cornea suffices to disturb the nutrition of the lens-capsule, and to produce deposits. But to this hypothesis it may, I think, be objected that it is difficult to understand why such deposits should be always confined just to the centre of the capsule; and moreover, that in recent cases we can almost always trace a distinct central opacity of the cornea. Even the absence at a later date of any corneal opacity does not disprove the pre-existence of a perforating ulcer; for how frequently do we not observe even considerable-sized ulcers disappear without leaving finally any trace behind. How much more likely, then, is it to be the case when the perforation has been so minute as it must have been to produce capsular cataract; for, had it been considerable, the adhesion between the cornea and lens would have been too firm to have yielded, and an adhesion would have resulted.

The first indication in the treatment of ophthalmia neonatorum is cleanliness. The infant's eye should be washed directly after birth, and the greatest care be taken that the same sponges, cloths, water, &c., are not used for the mother and child. The latter should not be exposed to cold winds or draughts, or bright, glaring light, &c. If its eyes are red and irritable, and there is a little muco-purulent discharge, a weak collyrium of sulphate of zinc or alum (one or two grains to an ounce of distilled water) should be applied two or three times daily. But if the inflammation runs high, and the discharge is thick, creamy, and copious, stronger astringents must be employed. In out-patient practice, where we cannot see the patients daily, the use of the following injection will be found the best mode of treatment:—Sulphate of zinc, 2 grains; alum, four grains; distilled water, one ounce. Some of this is to be injected, with a small glass syringe, between the lids every fifteen or thirty minutes during the day, and every two or three hours at night; the frequency of the application and the strength of the injection varying with the exigencies of the case. Before it is employed, the eye should be cleansed with an injection of lukewarm water, so that the discharge may be washed away. Every day or two a drop of a strong solution of nitrate of silver (from four to ten grains to the ounce) may be applied. If only one eye is affected, the other should be protected against contagion by a firm pad of cotton-wool and bandage, this being removed twice daily so that the eye may be washed. If the patient can be seen once or twice daily, I prefer to apply the mitigated crayon of nitrate of silver (one part of nitrate of silver to one or two parts of nitrate of potash) to the conjunctiva, as we can regulate and localise its effect better. The lids being well everted, the crayon is to be lightly applied to the palpebral conjunctiva, its action being at once neutralised by a copious application of salt and water. If there is great swelling of the conjunctiva, the latter is to be freely but very superficially scarified with a small scalpel directly after the neutralisation of the caustic. Then cold (perhaps iced) compresses should be applied to the lids, to diminish the inflammatory reaction, and assist in the contraction of the blood-vessels; but great care and circumspection are required in their employment; for if they are continued too long they may prove very injurious. If the edges of the lids are sore and excoriated, a little citrine ointment should be applied. When the disease presents the cyanotic character, and the discharge is thin and flaky, the nitrate of silver must be used with great caution. Wecker recommends small doses of mercury in such cases. Should the cornea become cloudy or ulcerated, atropine drops (two grains in an ounce of water) are to be used three or four times daily, the astringent treatment being continued as before. If the ulcer threatens to perforate, it should be pricked with a fine needle and the aqueous humor be allowed to flow off very gently; this may have to be repeated several times. If perforation has taken place, and there is prolapse of the iris, the latter should be pricked with a needle, and on the aqueous escaping the prolapse will collapse, and then a firm compress bandage should be applied. It may be advisable to repeat the pricking of the prolapse several times. If the prolapse is large, it should first be pricked, and then snipped off with a pair of scissors. When the perforation of the cornea is extensive, and the lens is bulging into it, an incision should be made in the cornea, and the lens be allowed to escape, a firm compress bandage being at once applied. We may thus succeed in saving a sufficient amount of clear cornea to permit of the formation of an artificial pupil at a subsequent period, and thus perhaps save a certain degree of vision.

Original Papers.

ON IRREGULARITIES OF THE TEETH.

By Henry Sewill, M.R.C.S., L.D.S.,

Dentist to the West London Hospital, &c.

Many subjects connected with dentistry are necessarily of great interest to general practitioners, and more especially to those who, living at a distance from London, are compelled to act on emergency as dentists. Irregularities of the teeth constitute one of the most important of these subjects, and a subject upon which the advice of the practitioner is most constantly sought. At the period of second dentition the child's mouth usually presents an unsightly appearance owing to the absence of temporary teeth and the slow advance of the permanent set. Unable to judge whether the apparent deformity be transient or not, and anxious that the teeth shall, at least, not be a source of disfigurement, the parents, in the absence of a dentist, are naturally led to consult their medical attendant. Not unfrequently they bring children with the request that some particular temporary or permanent tooth may be extracted, the removal of which they consider will avert or cure an irregularity.

In a great number of these cases all appearance of deformity passes away as dentition becomes completed, but in a considerable proportion malplaced teeth retain their abnormal positions, and so give rise to permanent irregularities. Such irregularities tend to cause or accelerate premature decay of the teeth, and are, also, often alone sufficient to impair the general symmetry of the face. By judicious treatment, however, they may, as a rule, be prevented or cured; but, on the other hand, by unnecessary interference both injury and sufferings are inflicted upon the patient. It will be understood, therefore, that an acquaintance with the causes and nature of irregularities forms a necessary acquirement of those who undertake to deal with them.

Where mechanical apparatus is required, the treatment of irregularities passes beyond the province of the surgeon. The surgeon, however, ought to be able to judge when he may interfere with advantage by extracting teeth, or when he may refrain with safety, and thus avoid inflicting unnecessary pain. He should also be able to recognise the cases which require to be promptly referred to the dentist, in order that they may not, by delay, be rendered difficult of cure, or irremediable.

It is impossible to lay down rules which shall serve the surgeon in every instance, since exceptions constantly present themselves. Nevertheless, by a brief discussion of the general characters of these affections, and by a reference to some of the more common examples, practical knowledge may be imparted to the surgeon which, as well as guarding him against error, will enable him to deal successfully with many cases. It cannot be expected that, in addition to the numerous and extensive subjects with which one in general practice has to be thoroughly acquainted, he will burden himself with complex points in dentistry. If therefore the part which the practitioner should take in such cases can be concisely and clearly indicated, the objects of this contribution will be fully achieved.

It may be well to premise that in speaking of irregularities, reference is made to the permanent teeth only. No object would be gained by the treatment of irregularities of the temporary teeth, since they are shed in early life; but, indeed, they are rarely, if ever, malplaced.

The number and characters of the temporary teeth, and their relations to the permanent set at the period of eruption, may be usefully remembered. The temporary set consists of ten teeth in each jaw—namely, four incisors, two canines, and four molars. These are afterwards replaced by the permanent incisors, canines, and bicuspids. The developing incisors and canines may be roughly stated to occupy bony crypts in the upper jaw above and behind, and in the lower jaw below and behind, the partly absorbed roots of the temporary teeth which they respectively succeed. The bicuspids replace the temporary molars, and are contained in crypts within the divergent fangs of those teeth. The permanent molars are situated in that portion of bone altogether posterior to the deciduous teeth.

The age at which second dentition commences, varying from the fifth to the eight year, is of little or no importance; but the order in which the teeth are cut is invariable, and is as follows: first molars, central incisors, lateral incisors, first bicuspids, second bicuspids, canines, second molars, and lastly, after the lapse of a few years, the third molars or wisdom teeth.

With a knowledge of the order of eruption and of the following characteristics which distinguish the permanent from the temporary set, the surgeon will not be likely to sacrifice a valuable tooth by mistake—an accident which happens by no means rarely. An error of this kind is, however, hardly possible, except in the case of the incisors and canines. The permanent molars will be known from their position posterior to the temporary teeth; whilst the bicuspids may be easily recognised, since no such tooth exists in the deciduous set. The permanent incisors, if present during the persistence of the temporary set, will be found posterior to the teeth which they replace. They are larger in size, firmer and denser in structure, and have along their cutting edge three small tubercles, which give them a serrated appearance. Their enamel, extending beneath the surface of the gum, terminates in an imperceptible slope towards the fang, whilst in the temporary teeth it ends in an abrupt ridge, which can be defined by the finger-nail, at the level of the gum. This distinction applies equally to the whole series. The permanent canines may be distinguished by their great size in comparison with the corresponding temporary teeth, and by their position, which is external and prominent. In the case of these teeth, also, a characteristic ridge may be felt along the external alveolar wall, which corresponds to the fang of the tooth.

In terminating these preliminary remarks, it is desirable to refer to a somewhat popular error. It is commonly believed that the premature extraction of temporary teeth may act as a cause of deformity of the jaw, and thus of irregularity of the teeth. This belief is not substantiated by physiological facts, and is, moreover, disproved by practical experience. Whilst, therefore, we should guard against uncalled-for interference, we should at the same time not hesitate to extract those temporary teeth the removal of which is necessary for the cure of deformity, or for the relief of disease.

I now come to speak more particularly of the different varieties of the irregularities. They may be divided into two classes:—First, those in which the jaw is well formed, but in which, owing to retention of the temporary set, permanent teeth are forced into unnatural positions. Secondly, those due to deformity of the alveoli, or of the body of the jaw itself.

In the first class, if the temporary teeth be removed sufficiently early, those that are displaced tend spontaneously to assume their proper positions. Should, however, the deformity be allowed to continue for any great length of time, the teeth become fixed, either by the consolidation of the bone, or by the advance of the contiguous teeth, or by the locking together of the upper and lower sets when closed. The nature of these cases will be made clear by a reference to the most common example, illustrated in Fig. 1, where the permanent incisors of the upper jaw are seen to occupy a posterior position owing to the persistence of the temporary teeth. The prompt extraction of the latter would enable nature to effect a cure. If, however, this were delayed until the permanent teeth were fully protruded, they would pass, on closure of the jaws, behind instead of in front of the lower incisors, as shown in Fig. 2. A permanent obstacle to their forward movement would thus be opposed, which could only be

FIG. 1.

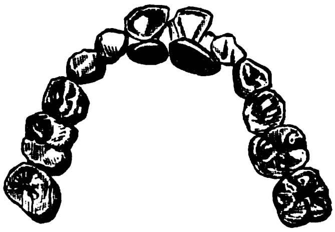
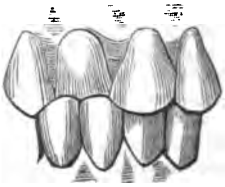


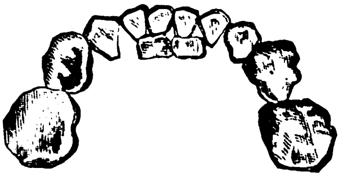
FIG. 2.



overcome by the mechanical means of which I have afterwards to speak.

A corresponding irregularity occurring in the teeth of the lower jaw is shown in Fig. 3, to which similar remarks apply. Delay here, however, is not so dangerous as in the case of the upper set. The normal position of the lower teeth being behind those of the upper jaw, the danger of locking does not exist, and mechanical interference is rarely required. The extraction of the temporary teeth should, nevertheless, not be too long delayed, lest the adjoining permanent teeth, taking a forward position, prevent the advance of those that are displaced.

FIG. 3.



This first class comprises a great variety of irregularities of the incisors. They may be crowded together so as to overlap each other, as in Fig. 4, twisted on their axis, as in Fig. 5, or, indeed, may be displaced in almost any direction. The duty of the surgeon is to promptly extract the offending temporary teeth, and, should the deformity not speedily decrease, at once to refer the case to the dentist.

FIG. 4.

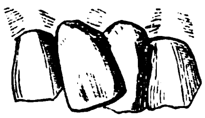
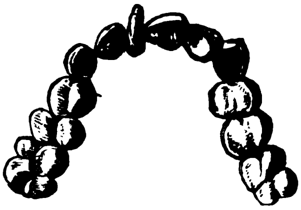


FIG. 5.



The canines are very subject to displacement, being commonly forced into an external prominent position. This constitutes a very unsightly irregularity. The common practice in such cases is to extract the projecting teeth. Such a proceeding cannot be too strongly denounced. The canines are the strongest and most durable of the teeth; they contribute most to the symmetry of the mouth, with the exception of the incisors, and they can, moreover, almost invariably be brought by treatment into their proper places. It may indeed at once be stated that the extraction of a permanent incisor or canine for the cure of irregularity is very rarely justifiable. Should it be absolutely necessary to sacrifice a permanent tooth, the choice will, as a rule, fall upon the first molar. This tooth, unfortunately, even in early life, is either so extensively carious as to require extraction, or is at least in a condition in which it could not be expected to endure during many years. If, however, the first permanent molar be free from decay, the choice may fall upon the second bicuspid, the loss of which is but little damaging to the appearance.

It may, perhaps, be asked how the extraction of a tooth situated so far back as the first molar can relieve crowding at the front of the mouth. It is found that on the extraction of such a tooth the pressure is very rapidly relieved, that the crowded teeth spread equally apart, and that in a comparatively short time the space previously occupied by a large tooth becomes obliterated.

After the general observations that have been made, the bicuspids may be dismissed with the remarks, that they are sometimes displaced by the retention of portions of the deciduous molars, that this displacement is usually in an inward direction, and that the treatment is similar to that of the incisors.

Irregularities due to malformation of the jaw constitute the second class. In the recognition of these the point of the greatest value obviously is a knowledge of the exact form of a well-shaped maxillary arch. The anterior portion of this arch, containing the incisors, canines, and bicuspids, forms an almost perfect semicircle, whilst those portions containing the molars continue the arch backwards in slightly curved and divergent lines. Flattening or contraction of this arch, or abnormal development of any portion of it, gives rise to irregularities of the teeth.

This class of irregularities is most frequently congenital, and at the same time hereditary, a peculiar abnormality of the jaw being, in this manner, reproduced in many members of a large family. They may, however, be due to injury or to other accidental causes. The nature of this class will be rendered evident by a few typical examples. Fig. 6 represents an extreme instance of a common variety. Here we see a protrusion of the central incisors, apparently due to abnormal development of the premaxillary bone. Fig. 7 illustrates a somewhat similar deformity of the lower jaw, due to a maldevelopment of the anterior portion of the alveolar ridge. An individual affected with this deformity is said to be underhung, the four incisors,

FIG. 6.

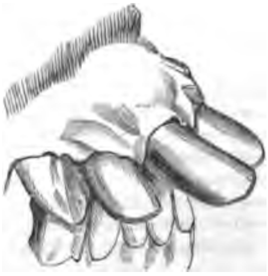
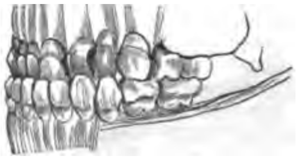


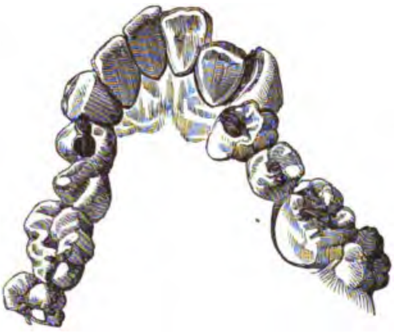
FIG. 7.



and sometimes the canines, passing without the upper teeth when the mouth is closed.

The V-shaped or contracted arch, instances of which daily present themselves, is shown in Fig. 8.

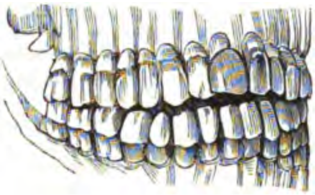
FIG. 8.



This gives rise to endless varieties of displacements of the teeth. The incisors and bicuspids are often forced inwards, the canines generally in the contrary direction; so that an irregularity exceedingly damaging to the expression of the countenance is the result.

A somewhat rarer example, shown in Fig. 9, is equally disfiguring in its effects. In this example the molars approximate on closure of the mouth, but the incisors remain apart and cannot be brought into contact. This is in consequence of an imperfect formation of the posterior portion of the lower jaw, by which the molars, being placed on a higher level than the front teeth, prevent them from coming into contact with each other.

FIG. 9.

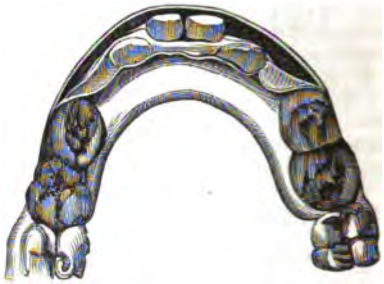


The distinction between the first and second classes of irregularity is rendered manifest by these examples, and nothing would be gained, did space allow, by multiplying them. It is evident that little can be done by the surgeon in the second class. In the treatment of this variety it is necessary to consider, first, the desirability of extracting teeth for the sake of obtaining space, and, under such circumstances, the teeth which can be removed with the greatest advantage; secondly, the extraction of malplaced teeth not amenable to mechanical treatment; and thirdly, the form of the mechanical apparatus required, and its construction. So many details are here involved, that none but those who make dentistry a special study can be expected to be practically acquainted with them. These cases must, therefore, be considered altogether beyond the province of the surgeon.

A few remarks on the mechanical apparatus used in the treatment of irregularities may be of interest, and also of some service in determining those cases which are capable of being either improved or cured by its application.

Instruments for the purpose of altering the position of malplaced teeth are constructed to fulfil two objects: to prevent the locking together of the teeth on closure of the mouth; and to exert such continued pressure or traction on those teeth which are irregular, that they may be gradually compelled to assume a normal position. To fulfil these objects, a plate of metal or of vulcanised india-rubber, as shown in Fig. 10, is accurately adapted to the teeth and palate, the molars being covered with sufficient thickness to prevent the front teeth from meeting. A fixed point is thus formed, to which springs or levers, elastic bands or wedges of wood, may be attached in any desired situation. These may be arranged to exert, with great nicety, any amount of force required, and to effect the desired result without exciting unnecessary inflammation.

FIG. 10.

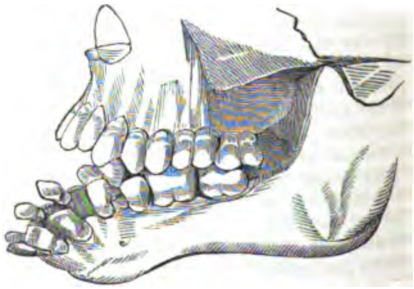


By similar contrivances the whole jaw may be modified in form. For instance, in the contracted palate, Fig. 8, an apparatus would be made to maintain equal pressure from within outwards along the alveolar margin. In time the required expansion of the arch would be accomplished.

Other cases may be advantageously dealt with by instruments fixed externally. Thus the case represented in Fig. 9 would be treated by a constant upward traction of the chin, a cap of leather adapted to that part being attached to a strap across the head by strong elastic bands at each side.

The almost marvellous manner in which the jaws may be modified in shape by the continued exertion of force in one direction, is not uncommonly illustrated in surgical cases. For example, the cicatrices resulting from extensive burns have a constant tendency to contract. When such a cicatrix exists upon the front of the neck, it draws the chin towards the chest, and in time causes the body of the bone in front of the ramus to curve downwards. In cases not unfrequently met with, the curvature is so great that the lower incisors become turned altogether outwards, and even downwards, the alveoli being completely everted. One of these cases is well shown in Fig. 11.

FIG. 11.



From a consideration of the principles upon which the mechanical treatment of irregularities is based, it will probably suggest itself that this treatment can be much more rapidly and effectually carried out in the child than in the adult. At the age at which the alveoli are in process of growth, and when they do not closely embrace the teeth, a malplaced tooth can be drawn into position in a short time, and with the exercise of but slight force; whereas in the adult, the bone being consolidated, the process is long and tedious. For the same reasons the cases in which the shape of the jaw has to be modified are much more amenable to treatment at an early age than at a later period, when the osseous system is fully developed. If therefore the opinion be formed that the treatment of a case of irregularity cannot be undertaken without mechanical aid, no time should be lost in the construction and application of the necessary apparatus.

Wimpole-street, Cavendish-square, June, 1869.

◆

ON "HOSPITALISM."

BEING A CRITICISM ON SOME PAPERS, WITH THE ABOVE TITLE, BY SIR J. Y. SIMPSON, IN THE "EDINBURGH MEDICAL JOURNAL" FOR MARCH AND JUNE, 1869.

By T. Holmes,

Surgeon to St. George's Hospital.

Sir James Simpson's recent publications on "hospitalism" have brought a heavy charge against our great metropolitan and provincial institutions—no less than that of deliberately sacrificing the lives they were instituted to preserve. This charge has attracted the attention of the public, with whom Sir J. Simpson's name weighs far more than his arguments, and who accept the statistics which so eminent an authority produces as being, of course, satisfactory; and consequently we see it every now and then said in the public papers that our large hospitals have been found to be a mistake, and that the charity of the public is being directed into other channels—towards village and other hospitals, which, it is said, have been proved to be more healthy. It concerns hospital surgeons very nearly to examine, as far as is possible, dispassionately, whether Sir J. Simpson has proved his case; and, perhaps, it concerns me in particular, since I was honored some years ago with the surgical part of an investigation into our hospital system, on which a "Report on Hospitals" was founded, forming a portion of the Report for 1863 of the Medical Officer of the Privy Council. If such facts and statistics really form the basis of a trustworthy comparison, they were as accessible to Dr. Bristowe and myself as to Sir J. Simpson, and it was my particular province to collect them; for we were, in plain terms, directed "to ascertain the influence of different sanitary circumstances in determining, in different hospitals (as compared with one another, and where practicable, with private practice,) more or less successful results for medical and surgical treatment, particularly among patients who are submitted to surgical operation." The same reasons which then inclined us to abstain from collecting such figures make me now regard Sir J. Simpson's facts as unsatisfactory and delusive; and I will endeavor, in as few words as possible, to show why I think so.

Let me briefly recapitulate what, if I understand it rightly is Sir J. Simpson's argument. 1. He has collected figures which, as he believes, show that in rural private practice the mortality of all amputations through the bones of the upper and lower limbs is 10·8 per cent. 2. He contrasts with these figures a somewhat similar number which show that the mortality of the same operations in large hospitals, in the metropolis and elsewhere, is 41 per cent. 3. Assuming that the patients and the cases are in every other respect similar, he concludes that the cause of the difference in death-rate is the internal arrangement of the hospitals in which the second class of cases were treated. 4. He believes that a certain change in those arrangements, which he describes, is necessary, and would be successful in redressing the balance of deaths. This change consists in substituting movable iron sheds upon the ground for our present three- and four-storied permanent brick buildings.

I have thus divided Sir J. Simpson's argument into heads, for the purpose of conciseness and clearness, I hope I have stated it fairly. I will now proceed *seriatim* with each head.

1. Under the first head, I altogether deny that figures collected as those of Sir J. Simpson's first list have been, can represent faithfully the normal and actual average of deaths after amputation in country practice. The first list (published in the *Edinburgh Medical Journal* for March, 1869) comprises the experience of 374 gentlemen, and it extends back more than twenty years. It is composed almost exclusively of two kinds of returns—viz., first, very small numbers of amputations for disease (in many instances single cases), which have almost uniformly proved successful; and, second, large numbers of amputations for injury, derived evidently from districts in which (as I will presently show) the circumstances are altogether different from those of London hospital practice, and displaying an amount of success quite exceptional in either London or the country. Now, in both these classes of cases I am sure that a more thorough statistical inquiry, if it were possible to make one, would produce something to balance this tale of success. It was the impossibility of making any such fair and complete statistical inquiry, and of estimating and excluding the numerous causes of difference which exist between hospital and private practice, that induced Dr. Bristowe and myself to abstain from any attempt at it in our Report. My conviction from reading Sir J. Simpson's figures is, that his list is composed of returns from surgeons, who, having been gratified by their success in the emergencies of practice, have treasured up records of that success, and have been glad to communicate it. Nothing can be more natural, nothing more legitimate than this. If, like the surgeons marked No. 92 and No. 171 in Sir J. Simpson's list, I had amputated for injury 22 times; or like No. 191, 29 times; or like No. 288, 52 times, without losing a single patient, I should be most happy to take any proper opportunity to say as much, and more particularly if the question was asked; but if, on the contrary, I had (as I know many surgeons in the country have) had one or two unsuccessful cases of amputation in a long experience, chiefly occupied in other branches of practice, and in which death occurred from previous disease

or concomitant injury, or operative disaster, or the want of proper attendance, why should I keep any record of facts which really prove nothing? or why should I make any return of them in a sanitary inquiry?

Let us remember the length of time comprised in these statistics, the great number of country surgeons who are compelled occasionally to resort to amputation, and, consequently, the small sample which these 374 returns must furnish of the mass of country amputations, and I think no unprejudiced person would hesitate to admit, what for my own part I firmly believe, that the mortality from all causes after amputations in the country is far higher than this list shows. My individual experience of amputations in the country is not very great; but such as it is, I should say that the good cases do well, and the bad cases do badly. For causes which I will presently dwell upon, I believe the success is greater than in town hospital practice; but a far different method of collecting information from that of Sir J. Simpson is necessary to tell us what the difference is; and, if we knew it, something which would deserve to be called reasoning would be required to tell us upon what the difference depended.

2. With reference to Sir J. Simpson's list of town amputations I have little or nothing to say. It is compiled, I believe, from perfectly authentic data; and those returns which give the entire experience of the hospitals quoted, no doubt show their mortality during the years comprised in the return. From accidental causes, the one with which I am most familiar—namely, St. George's,—which is given only for a short series of years, seems to me above the usual average; but the point is hardly worth dwelling upon. Only I would have the reader note that no principle of selection can here be at work. Hospital surgeons refuse nothing in the way of operation which comes to their hands. Amputation is being more and more restricted every day in city hospitals to cases of the worst nature, in which it offers often only a very faint chance of preserving life; and in a list like this, every case in which death is due to previous disease, concomitant injury, operative disaster, or negligent attendance, is reckoned equally with those in which the question of hospital influence may fairly be raised. A bare numerical comparison between perfect and imperfect returns must surely be delusive.

3. The third step in Sir J. Simpson's argument is a very important one, and one to which I would direct especial attention, since it shows, I think, the essential fallacy of his method. Sir J. Simpson argues about amputations by a numerical method of reasoning, exactly like that which would be applied by the statistician to cattle or to inanimate objects, just as if an amputation were an entity. The fact is obvious on very slight reflection that an amputation is a process—a step in the treatment of a surgical case,—and that its failure or success depends very commonly on the nature of the case to which it is applied. Now this is not shown by a bare collection of figures. The ordinary answer, that large numbers will balance the errors, and cause them to disappear, is only true if the errors do not depend on essential differences in the things compared. If they do, the errors, of course, increase with larger numbers instead of diminishing. I think I shall have no difficulty in showing that there are essential differences between the two classes of cases which Sir J. Simpson has here placed in juxtaposition. I have purposely quoted above four of the returns of amputation for injury in Sir J. Simpson's country statistics. They show when taken together no fewer than 125 amputations of all the limbs for injury (the thigh having quite its fair proportion) occurring in the practice of four surgeons, and comprising their entire experience, without a single death. Now, I would ask any person versed in hospital practice whether such success is possible in the class of injuries and in the class of patients upon which we operate? I admit, of course, that in each individual case success appears not impossible, otherwise the amputation ought not to be performed; but that 125 successful cases could occur together in the unselected hospital practice of four surgeons (as, for example, the four surgeons of St. George's Hospital) would be nothing short of miraculous, and that not because of anything which could be fairly, or even reasonably, attributed to hospital influence, but because in so many of our amputations for injury the operation is performed either in desperate injuries, where the patient sinks without ever fairly rallying, or after an unsuccessful attempt to preserve the limb, which has been frustrated by the diseased or decrepit condition of the patient. To produce for comparison lists like those of the four surgeons referred to cannot serve any useful purpose, since it is quite plain that those lists have been formed either of cases selected on quite different principles from those which govern hospital surgeons in performing operations, or of patients whose expectation of life and toleration of severe injury or operation is quite different from those of the patients whom we have to treat. Nor is there much doubt that both causes of difference are in operation. The latter is, indeed, proved from Sir J. Simpson's own papers. One of his correspondents, and very probably one of the surgeons whose experience I have here quoted, speaks thus of the patients under his charge: "Mr. Cribbes, of Gorebridge, after speaking of all wounds in his district—and the wounds are many among his colliery patients,—states, 'In none of them have I known erysipelas or fatal results ensue;' and he adds, 'These remarks apply wholly to the mining population.'" Now I am quite willing to assume, on this gentleman's authority, that the mining population are free from the ravages of those secondary surgical affections (such as erysipelas, pyæmia, phagedæna, tetanus, &c.), which make such havoc among our operations in town hospitals; but what is the use of a comparison between the two classes for the purpose of finding out the influence of hospitals on the urban population? Can Sir J. Simpson be ignorant of the fact that such secondary affections are met with in town practice, amongst every class of the population?—that the nobleman in his palace and the artisan in his narrow lodging suffer from erysipelas and pyæmia as well as the hospital patient? A habit has sprung up of speaking of "hospital erysipelas," as though the disease were one confined to hospitals; but it is well known that many more cases are admitted into hospital from private houses than originate in the hospitals themselves—a striking proof (considering that almost all grave surgical cases amongst the poor in London are removed to hospitals) that the causes of erysipelas in large cities are more rife in private dwellings than even in hospital wards. The same is the case with phagedæna, where that condition of wounds is prevalent; and there can be no question that it would be so with

pyæmia, if it were not that the severe injuries and operations which commonly lead to pyæmia are almost confined, among the poor of our large cities, to hospitals. The annexed list, which I owe to the kindness of Mr. W. Leigh, our surgical registrar, will show the proportion of each of the ordinary surgical complications of wounds originating in St. George's Hospital, in contrast to those admitted from the patient's own dwelling, during the last four years:—

During the Year.	Total No. of Cases.	No. of Cases that began in hospital.	No. of Cases admitted.
	Erysipelas.		
1865*	26	8	18
1866	31	5	26
1867	32	11	21
1868	34	19	15
	Diffuse Cellulitis.		
1865	15	3	12
1866	12	3	9
1867	19	4	15
1868	22	3	19
	Sloughing and Phagedæna.		
1865	51	29	22
1866	46	28	18
1867	12	2	10
1868	6	1	5
	Pyæmia.		
1865	20	18	2
1866	22	21	1
1867	23	20	3
1868	25	22	3

This last shows, (1) of cutaneous erysipelas 80 cases admitted from private houses, against 43 originating in the hospital; and of the cellulo-cutaneous 55 admitted, against 13 originating: or, on the whole, 135 cases of both forms of erysipelas brought into the hospital, against 56 originating there. (2) Of phagedæna the numbers are about even—namely, 60 cases originating in hospital, and 55 admitted. The return comprises two years in which phagedæna was extremely prevalent in the part of London where the hospital is situated, and such prevalence is of course greatest where many wounds are collected together. (3) For pyæmia the case is quite different, since the injuries and operations on which pyæmia depends are hardly ever treated in the houses of the poor in London. The numbers are, 9 admitted, against 81 originating in the hospital.

These facts are, I submit, quite sufficient to show that, whatever may be the case in the country, no security from the secondary complications of wounds would be obtained by treating the London poor in their own dwellings, since, even with the limited amount of serious surgical cases that are now so treated, there is a greater prevalence of such complications in their own dwellings than in hospitals. The same fact is proved by the great frequency with which patients discharged from hospitals with healthy wounds come back in a few days with some morbid action in the wound. In fact, unless ventilation, cleanliness, quiet, and careful regimen exercise no control over the progress of surgical cases, I venture to say that the result would be a great increase in the mortality. But really, to judge from Sir J. Simpson's papers, one would think that dirt and hovels and "box beds" were favorable to recovery from severe operations.

I have hitherto endeavored to show that Sir James Simpson's comparison between the statistics of private practice in the country and those of hospital practice in towns is unfair, because of the imperfection of the method which he has adopted for ascertaining the real mortality in the former class of cases. But I assert further, that such a comparison as Sir James Simpson has made between private and hospital practice must always be unfair, because the cases are selected on different principles in private practice. This assertion involves no charge or reflection upon the private practitioner; but I think it will be obvious, to any person who considers it, that the fact must be as I say. I have no experience of private practice among the poor; but unless it differs very much from what is the case amongst other classes of persons, the private practitioner would very rarely be permitted to perform such a grave operation as an amputation unless he could hold out much more confident hopes of success than any candid man could do in many of the amputations which we perform. Then there is the dislike (and a very natural and proper feeling it is) of a private practitioner to perform an operation which is likely to prove fatal; and there is also the habit, which the poor have in doubtful and grave cases, of seeking the advice of the hospital surgeons. All these causes tend to increase the proportion of favorable cases in private as compared with hospital practice.

Again, as bearing on this question of selection, I may point out the influence which conservative surgery has unquestionably exerted in increasing our mortality after amputations, by withdrawing all the better or more hopeful classes of cases entirely from the amputator. In old times, there can be no question, many limbs were amputated which would now be spared altogether, and many others in which we should now perform excision. The residue, upon whom amputation is performed as a last resource, consists of all the cases of acute disease, of exhaustion, of visceral affection, and of advanced age. Consequently it is no paradox to say that, as surgery improves, the rate of mortality after amputation tends to increase. If it be true that in the provinces practice inclines more to the old than the modern methods, this would tend to increase the success after amputation. This is a matter which cannot be dealt with by figures; but I mention it to illustrate my previous observation, that amputations must be regarded, not as independent entities, but as processes or incidents in the treatment of cases, and that their success depends largely on the previous part of the case.

Again, how is it possible to know that the assumed excess of deaths is caused by hospital arrangements, without knowing the causes of death? For instance, Sir J. Simpson says that nothing proves to him more strongly the truth of his case than the difference in the rate of mortality between the lists of amputations of the forearm in London and the country respectively. In an interesting conversation which I had with him a short time since, he maintained that the causes of death were not material, for that in so simple an operation as amputation of the forearm nothing but some deleterious influence acting on the patients could account for a high death-rate. To test this in the instance most familiar to me, I had recourse to the "amputation book" of St. George's Hospital, which gives all the cases of amputation for about sixteen years. During that period there have been four deaths after amputation of the forearm, among 41 cases.

---

* During the year 1865 the total number of patients admitted was 2107
" 1866 " " " 2163
" 1867 " " " 2066
" 1868 " " " 2066

I append the causes of death in these cases. In the first case (a primary amputation), the man had recovered from the operation, and the wound was nearly healed. He was discharged from the hospital, and attended as an out-patient until the wound had healed entirely. He was then reported as recovered, and celebrated his recovery by getting very drunk. Next day rigors came on; and in a few days afterwards he was admitted with evident symptoms of pyæmia. In this case the fatal affection was obviously induced by drunkenness, and could not be charged to hospital arrangements, since it did not come on till after his discharge. The second case was that of an elderly woman, who was admitted with pyæmia, affecting, amongst other parts, the wrist-joint, which was disorganized. As she had rallied, and it seemed possible she might recover if freed from this irritation, the hand was amputated. Here, again, as the patient had contracted pyæmia when out of the hospital, it would be unreasonable to charge her death to the effect of hospital arrangements. In the third case (that of an elderly woman operated on for disease), the arteries were so brittle that it was with great difficulty they could be tied. She went on well—except for some sloughing of the stump, the result of imperfect nutrition—for more than a fortnight, when suddenly one of the arteries gave way, and she died, after copious bleeding, in an hour. In the last case, the man was very old (nominally sixty-seven, really perhaps many years older), and obviously near the end of his life when admitted. The operation was done to free him from the exhaustion caused by abscess of the wrist; but he gradually sank, as he had been sinking before his admission. Now, no hospital arrangements will, I submit, prevent brittle arteries from bleeding sometimes, nor make an old man into a young one. Sir J. Simpson may reply, "My country statistics prove that many old men survive amputation." This, to my mind, is a proof that they are more hale and hearty, less aged in fact, than the men of the same age whom we meet with in town. To Sir J. Simpson it shows that the town operations ought to have been performed in a temporary iron, instead of a permanent brick hospital, and on the grouhd floor, instead of, possibly, upstairs. How can we decide except by tracing the history of the cases before operation, and knowing something of the causes of death in fatal cases? So far from being in the least degree convinced by the alleged fact that we at St. George's have lost one-tenth of our forearm amputations, while Sir James Simpson's country correspondents have lost only 1 in 188, I would draw the inference from our experience that we rarely or never lose a case of forearm amputation except under circumstances which satisfactorily account for the death without any necessity for resorting to the hypothesis of hospital unhealthiness.

4. Finally, would the alteration in hospital arrangements which Sir J. Simpson suggests redress the balance of deaths?—i. e., is the contemplated change really a benefit? In discussing this question I am quite free to admit that the aggregation of the sick and wounded in hospitals is probably deleterious. It has not, so far as I have seen, been proved, but it is so probable that I think we may assume it, that if every patient could have a separate, roomy, well-ventilated chamber, and a skilled nurse to himself, he would be more likely to recover than if placed with others in an hospital ward. Yet even this impossible improvement would not, I believe, protect our urban population from the ravages of the secondary surgical complications of wounds. For no such improvement could leave them better off than the rich are whom we treat in private practice, and amongst the rich these complications are far from being unknown. If Sir J. Simpson had not been so scrupulous to compare things which are dissimilar, if he had not, as he says he did, "in selecting the practitioners to whom the application and schedules were sent, avoided as far as possible including in the list any members of the profession residing in our large hospital cities and towns," his eyes would have been opened to the fact that, in order to test the effect of hospital arrangements upon cases, the cases themselves must be otherwise under similar circumstances; and that we were not far wrong when, in the "Report" above quoted, we said of amputations that "the death-rate in these as in other cases is by itself a very fallacious test of hospital salubrity." To contrast the mortality of a district where erysipelas and other fatal surgical complications are unknown, with that of a London hospital population, amongst whom they are unfortunately common enough, and without further inquiry to conclude that the difference depends on hospital arrangements, is surely very bad logic, when the fact is so well known that it hardly needs inquiry to discover that the same complications affect the urban population out of hospitals. We may surely conclude with more reason that the success of operative practice is greater in private practice universally than in hospital practice because the aggregation of patients must generate some unwholesomeness in the atmosphere; and that operations in the country are very probably more successful than in town, because the air is better, the patients' constitutions better, and the cases operated on less desperate. But until Sir J. Simpson can show us how to avoid the aggregation of our patients we shall not be able to redress even the preventable causes of death; the difference between town and country is, I fear, beyond our power to alter, and it is a difference which in London is increasing daily instead of diminishing.

But, of course, the substitution which Sir James Simpson proposes is far less than what I have above imagined. He gravely tells us we ought to replace our present palatial hospitals by a series of iron sheds on the ground. Now, if St. George's Hospital were transformed into a series of iron sheds, these sheds would still be in the condition of our present hospital wards, except that the walls would be, I suppose, more pervious to the weather, the floors nearer the soil, and the sheds more easily removed—though God knows where, in the present condition of London, they could be removed to. I omit altogether the question of how space could be originally obtained for the mass of sheds required (which must be properly isolated from each other), how drainage would be provided for, and such other matters of detail. But we should, after all, come back to an hospital ward again—liable to overcrowding as now, liable to contamination of its atmosphere by the exhalations from wounded and diseased surfaces as now, liable to the effects of contamination from careless nursing as now; in fact, equally liable to all admitted and proved sources of unhealthiness, and free only from those which, for anything that has yet been shown, are imaginary. The only differences, in fact, would be, that all the wards would be upon the ground, and that the buildings might always be tolerably new. Sir J. Simpson has somehow convinced himself that the heaping-up of one story over another exercises an injurious influence on the healthiness of an hospital building. This has often been asserted by Miss Nightingale and others, but, so far as I know, nothing in the nature of proof has been adduced.* Nor has anything approaching to evidence been given to show that a building used as an hospital becomes more unhealthy as it becomes older. The only fact which Sir J. Simpson alleges is, that the amputations in the Edinburgh Infirmary when it was first founded seemed to be more successful than they are now, for which fact (admitting it to be a fact) any number of equally plausible explanations might easily be offered.

In conclusion, may I be allowed to observe that the alleged greater salubrity of cottage hospitals, or of small city hospitals as compared with large ones, rests on no evidence whatever; nor has it been shown, so far as I am aware, that similar classes of patients and cases can be treated with greater success, on the whole, than in our large hospitals. I have freely admitted the drawbacks which are incidental to the treatment of patients when collected in large numbers; but we must not forget that there are drawbacks also in treating the poor in their own homes. The frequency with which slight cases of wound, discharged from hospital convalescent, return with some of the secondary complications, such as erysipelas or sloughing, does not encourage one in expecting much more success in treating the graver cases in the homes of the patients themselves over what we now obtain in hospital. Sir J. Simpson appears to make light of ill-ventilated rooms, dirt, want of nursing, and all the other discomforts of the dwellings of the poor. But we want much more careful researches, and, if I may be pardoned for saying so, much closer personal knowledge of the subject, than is displayed in Sir J. Simpson's papers before we can admit that grave surgical cases can be safely treated at home, in the circumstances of our London poor.

With respect to small and large hospitals, I have searched in vain for any evidence that there is any difference in their salubrity, providing the cases are the same. Whether cottage hospitals are more or less healthy than those at present in use must be tested by more ample experience than there has yet been time for.

I hear from Sir J. Simpson that there have been experiments commenced in Germany and America, by which existing large hospitals are to be broken up into fragments. It will be time enough to institute similar experiments in our own large cities when we have had decisive proof of their success elsewhere. Meanwhile Sir James Simpson's attacks on our hospital system ought undoubtedly to awaken our attention to its defects, and to make us eager to adopt any means which afford a reasonable probability of remedying them. The mortality which prevails after amputation in city hospitals is very high, and we are indebted to Sir J. Simpson for pressing the point on our attention; though I may be permitted to observe that the large metropolitan hospitals have never been inclined to blink the fact. From St. George's, from St. Bartholomew's, from Guy's, and I dare say from other hospitals also, complete lists of their amputations have been repeatedly published. Much of the mortality I believe to be inevitable; still it is a most important question whether all of it is so. I recognise most fully the service which Sir J. Simpson is doing in bringing this question publicly forward; and though I cannot avoid differing with his conclusions, I do full justice to the noble and charitable motives which have prompted the investigation.

Clarges-street, W., August, 1869.

◆

VACCINATION.

ITS INFLUENCE UPON THE HEALTH OF INFANTS, AND THE TEMPERATURE VARIATIONS OCCASIONED IN ITS COURSE.*

By Wm. Squire, L.R.C.P. Lond.

The direct object of the present inquiry is not into the expediency of vaccination: with the universality of the practice the terrible nature of small-pox would become a matter of tradition, or of the rarest experience. It is proposed, in order to define more exactly what is effected by this influence that we all undergo, to subject it to the same strict investigation to which we submit other disorders, with the object, not of explaining its nature, but of tracing its affinities, and of clearing up some uncertainty as to its mode of action; of helping us to understand what part of its effects is essential to its special purpose, what is merely incidental or perhaps avoidable; while the study of the changes produced in the system of the infant during the course of vaccination, and the consequent liability to changes therein, has a practical bearing upon the health of infants.

Further inquiry is needed into the first part of the question, because we cannot yet say how much of the special immunity from small-pox conferred by vaccinia is due to its incubation period, how much to its day or two of febrile excitement, how much to the formation of the areola, or to the other phenomena of its decadence. On our knowledge of the second part of the question rests our power to dispel the fears of the anxious, and to guard against the possibility of injury to the weak.

A difficulty is met with at the outset, as embarrassing to the medical inquirer as it ought to be consolatory to the public, arising out of the slight degree of illness attending the progress of vaccinia in infants. Before any approach to accuracy could be attained as to the special changes attributable to this cause, a careful investigation into the circumstances influencing infantile health was necessary. The results obtained, published elsewhere, are also useful as a preliminary to the study of other infantile disorders. After estimating the effects of disturbing causes, and allowing for differences of constitution, temperament, food, and hygiene upon the health of infants, it can be shown that there is commenced almost from the moment of inserting the vaccine virus a very definite series of phenomena, fairly owing to its presence, and well indicated by the lines of temperature-change exhibited in the diagrams.

---

* On this point Mr. Simon says: "As regards wards kept as wards ought to be kept, I cannot conceive that the several clean items will make a dirty total; and, so far as my present knowledge extends, I have every reason to believe that, subject to the qualifications I have stated, a given number of patients may dwell under one roof as safely as under several roofs......Of the various surgical wards in which my own hospital experience has been gained, the one which I remember with most satisfaction was a top ward, which had three stories of wards under it.

* Read at the meeting of the British Medical Association at Leeds, July 30th.

The first variations of the temperature line show more the difference of circumstances under which the disease commences than the special influence of a particular disease, the general tendency, however, being to a temporary elevation of temperature. To this succeeds the first special effect of vaccinia, comparable to the "sickening" for any of the exanthemata, and characterised by a uniform lowering of temperature. This has always been noticed in the best-observed cases, but is indicated in all. At the same time the child, instead of being restless and wakeful, becomes dull or sleepy; the pulse and respiration are below the usual rate, and though the pulse soon quickens, the respiration continues to be either slow or shallow, so that yawning is necessitated; there may also be bronchial râles, or slight laryngismus. As long as the period of low temperature continues—and it is often prolonged by slight concurrent ailment,—there may be doubt as to whether the vaccination has taken or not. During this time the original punctures disappear, and new papular elevations occupy their site; the day after, usually the fourth, these become vesicular. A steady rise of temperature commences forthwith, the child becoming lively, and seeming to be remarkably well. With the increase of temperature on the sixth and seventh day there may be some miliary or herpetic eruption, if the child be predisposed, or, more rarely, diarrhœa; the child meanwhile taking suitable food well, and even increasing in weight. Still, if other proof than the result were wanting of the progress of a disease, not only the rise in temperature, but the evening exacerbation, unusual in infants, would suffice.

On the eighth day the disease itself is sufficiently obvious. The full vesicle needs no description. With or immediately preceding the sudden increase of temperature, which is the most prominent feature of this stage, there is a remarkable acceleration of pulse and breathing: these having been 120 and 40 at first, and 120 and 30, or less, on the third day, are now 160 and 60, and the temperature is over 100°. When the latter, in one case, had reached 102°, the former were 200 and 80. This was in a child nine months old, and in hot weather. In younger children the alteration of pulse and respiration is hardly so marked, yet on the eighth day they will generally reach 150 and 50. The greatest constitutional disturbance and the highest temperature are before the areola is fully formed, and the most remarkable feature of this stage is the sudden fall of temperature, generally two degrees, on the ninth or early on the tenth day; so that while the arm is hot to the touch, tense, indurated, pulsating, and the restlessness and discomfort of the little patient are extreme, the temperature has suddenly subsided, and though the local process may be active, the general disease is over. There is moreover, as in convalescence from all acute disturbances of health, not only a low mean temperature, but this is easily further depressed by slight causes, and is found even with any subsequent complication, such as the vaccineous roseola; it is generally, also, lower at night. After the third week even this tendency is recovered from, so that absolutely no difference can be found, upon the most careful comparison, between children of the same age who have or have not been vaccinated.

The true position of vaccinia as an acute specific disease is made apparent by the lines of temperature variation traced during its course, and in comparing what here happens with what occurs in other zymotic diseases a close parallel is observable—first, in the period of low temperature at the commencement—a point actually observed by me in the ingress of measles; secondly, in the excitability accompanying the first elevation of temperature; thirdly, in the duration of the febrile stage, which in most of the ailments of this class in children lasts about five days; and lastly, in the subsequent tendency towards depression. Coming to a more close analysis, this ailment has analogies with measles rather than with scarlet fever; but is more closely allied, if not identical, with the course of small-pox itself, (the phenomena are identical with those of inoculation, as described by Dr. Gregory,) stopping short, however, at the eruptive stage, and free from its secondary fever, unless the local process be aggravated or mismanaged.

The importance of the areola, except as a sign of the previous disease, is very much diminished. It is to the uninterrupted course of this previous disease that most of the protective power of vaccination must be owing. When less than four vesicles have been produced, there is more liability to interference, except in children of great excitability, or constitutional tendency to suffer severely from this kind of affection, when dependence might be placed upon three vesicles only, with less fear of trouble from the after-consequences, which are entirely accidental, not essential to protection. The reason why vaccination will be protective against small-pox if done within three days of exposure to infection is not that there is time for the areola to form, but because twelve clear days being requisite for taking this disease by infection, while only eight are required when there is direct insertion, one clear day is thus given for the establishment of the one form of disease rather than of the other.

That the age usually chosen for the performance of vaccination—namely, from two to three months—is the most suitable is shown by the greater disturbance produced by it in older children, and the slightly marked effects of it in those younger. When it is remembered that the period of trouble from the arm—the stage at which most of the mischief feared from vaccination happens—is one of depression, and that this stage is no essential part of the influence desired, it ought not to be difficult to arrest, or prevent altogether, accidents which even now are extremely rare.

Orchard-street, Portman-square, July, 1869.

ON

ALBUMEN IN THE URINE, SOMETIMES IN CONJUNCTION WITH THE COLORING MATTER OF THE BLOOD, AS A CONSEQUENCE OF SURGICAL DISEASES AND OPERATIONS.*

By Henry Lee, F.R.C.S.,

Surgeon to St. George's Hospital.

During the years 1837–8 I collected together several cases which occurred in the wards of St. George's Hospital, in which the urine was albuminous, but in which there was reason to believe that there was no disease of the kidneys. In most of these cases the presence of albumen was accounted for by the ascertained disease of the bladder or of the prostate gland. This, however, was not invariably the case. One instance in particular occurred, which left a permanent impression upon my mind. A patient had albuminous urine, and in the absence of any ascertained disease of the bladder Sir B. Brodie diagnosed the affection as a disease of the kidney. An issue was ordered in the loins. The patient maintained that his back was sound, and that the disease was below, pointing to his perineum. Sir Benjamin told the patient that he must yield to his judgment upon the point. This the patient refused so to do, and backed his own opinion by leaving the hospital. What the result was in this case I had no means of ascertaining; but the constancy with which the man affirmed that the disease was not in his back led me to think whether, after all, he might not possibly have been right.

Many years after this I met in consultation, at Sir B. Brodie's, Dr. Owen Rees and the late Dr. Seth Thompson. The patient was an eminent and well-known engineer. He had albuminous urine. He was supposed to be laboring under disease of the kidney, and a most unfavorable opinion of his case was given. The patient went to Egypt, and returned apparently very much improved in health. He now worked night and day, and often retained his water for many consecutive hours. At the time when one of his greatest works was achieved he was seized with an attack of apoplexy, and died a few days afterwards. Upon a post-mortem examination, there was no disease of the kidney to account for the albumen in the urine, but a most remarkable condition of the right ureter was discovered. The ureter on this side was very much dilated throughout. About its centre was a hard knot, which, upon examination, was found to be caused by an intussusception of all the coats of the canal. At this part the ureter was not contracted; on the contrary, the little finger could be passed along it without disturbing the intusscepted portion. The mucous membrane here was intensely vascular. It was no doubt from this congested knot that the albumen, which for many years had been present in the urine, was derived. The post-mortem examination in this case was conducted by Mr. Charles Hawkins and myself.

During the last year I read before the Clinical Society a paper in which I gave the details of a case in which a large quantity of albumen was habitually present in the urine. This patient had caries of one of the bones of the forearm and of one of the ribs. The case I regarded as having its origin in specific disease. Under specific treatment the affected bones were restored, and after a time the albumen entirely disappeared from the urine. When this case was read, some of the most eminent pathologists present were disposed to look upon the presence of albumen in the quantity described, as indicative of disease of the kidney. This disease they supposed must have been cured by the specific treatment. On the other hand, I was inclined to regard the presence of albumen in the water as a consequence of the disease which was going on in other parts of the patient's system.

Quite recently two cases have come under my care which have appeared to me to demonstrate that when the blood is contaminated in consequence of accident or disease, albuminous water may be the result, without any organic disease of the kidney. The albumen in such cases, together with the coloring matter of the blood, may escape in very considerable quantities.

Case 1.—W. R——, aged twenty-two, was admitted into St. George's Hospital, under my care, on the 25th of April, 1869, for varicocele.

On the 6th of May I performed the usual operation for that disease. There was some slight bleeding at the time.

The following day (May 7th) the skin between the needles had become greatly distended by the effusion of blood. The skin over the effused blood sloughed on the 8th, the pulse was 112, and the tongue furred. The next day the urine had assumed a dusky-brown color.

May 10th.—The urine was of the color of decoction of sarsaparilla; it contained an abundant deposit, and was albuminous.

11th.—The urine passed in the morning was almost black. That which was voided in the afternoon was "smoky." He was now better. Pulse 86; skin natural.

13th.—The slough between the needles was separating. Urine still albuminous.

14th.—The urine was now almost clear, and contained no albumen.

The wound healed readily; and the patient was discharged on the 2nd of June.

Dr. Beale was good enough to examine for me the urine passed in this case. He reported that "the black and almost opaque urine was of specific gravity 1030. It contained, in 1000 grs., 71 grs. of solid matter. The deposit consisted of triple phosphate and globules of urate of soda. The black color was not due to blood-corpuscles, but to coloring matter adherent to very minute granules of urate diffused through the urine, but not in solution. When the urine was evaporated, the extract had the ordinary appearance, and exhibited no unusual color whatever."

I had an opportunity of seeing this patient and examining his water during the third week in July. He was then in perfect health, and his urine quite natural and free from albumen.

Case 2.—A. C——, aged forty, was admitted into St. George's Hospital on Jan. 2nd, 1869.* Five years previously he had been wounded by a musket-ball in the lower part of the neck. The wound healed, and he resumed his duty at the expiration of seven weeks. After a short interval, however, several abscesses formed in the neighborhood of the old cicatrix; these gradually destroyed the greater part of the soft tissues on the right side of the neck. No fresh abscess had, however, formed for the last four years, but during that time he had suffered much from what he called rheumatism. On Dec. 31st, while stretching his neck in shaving, he felt an unusual sensation. The next day there was a swelling at the part, which he supposed to be a boil. This swelling gradually increased; it pulsated uniformly over its whole surface, and the skin covering it became quite black. The common carotid was tied on January 8th, 1869, and a drawing of it was made on the 11th.

---

* Written for the Leeds Meeting of the British Medical Association.

My clinical clerk had tested the water in this case previous to the operation, and had found it free from albumen.

Jan. 13th.—A drop or two of blood oozed through the skin covering the tumour, which was reduced in size, and had entirely ceased to pulsate.

14th.—The urine was of a very dark color, and very albuminous.

15th.—Dr. Ogle, who was good enough to see the patient with me, reported that "the urine was very albuminous. It contained no casts of the uriniferous tubes. Its specific gravity was 1029. It contained no appreciable amount of sugar." Some puriform fluid, containing broken-down coagula, was discharged from the wound.

16th.—The wound was looking well, and appeared to be healing.

A second drawing was made on the 13th of February, when there was very little discharge from the wound, which had nearly closed. The patient never, however, regained his general health. The albumen in the urine continued. He suffered much from pain in the chest and upper part of the abdomen. He gradually became much emaciated, and died. Unfortunately no post-mortem examination could be obtained.

Independently of the cases which have fallen under my own care, I have known of others in which, after a surgical operation or disease, the urine has become albuminous, and sometimes has remained so for a very considerable period. I have also been informed of two cases in which the urine at the same time became very dark-colored, and was supposed to contain blood. The cases which I have given, although few in number, are, I think, sufficient to show that albumen in large quantities may be present in the urine as a secondary affection dependent upon disease in some distant part. Such an affection must be carefully distinguished from any local disease capable of producing albumen in the ureters, bladder, or urethra. In both classes of cases the albumen may be produced independent of any organic disease of the kidneys, and in both it may be mixed with the coloring matter of the blood. From the cases which have come under my notice I am inclined to believe that in the first class the coloring matter of the blood is found independent of any blood-corpuscles; and that in the second the color depends upon the blood-globules themselves. All the cases which I have known in which the peculiar color of the urine, to which I have drawn attention, has accompanied the secretion of albumen as a secondary affection, (independent of any disease of the kidney, and independent of any affection in the urinary channels themselves,) have been instances in which there was evidence, more or less distinct, of coagula having formed in some part of the vascular system. These coagula have been disintegrated and removed. The coloring matter of the blood has disappeared with the other portions of the coagula; and when we find this same coloring matter reappearing in a disintegrated form in the secretion of the kidneys, we are justified, I think, in concluding that the matter so eliminated formed part of the coagula which had been disintegrated, and removed in the course of the circulation.

Savile-row, August, 1869.

◆

ON THE USE OF CHLOROFORM IN THE CURE OF CLEFT PALATE.

CASES; WITH REMARKS.

By Thomas Smith, F.R.C.S.,

Assistant-Surgeon to St. Bartholomew's, and Surgeon to the Hospital for Sick Children.

In October, 1867, I presented to the Royal Medical and Chirurgical Society a paper on the "Cure of Cleft Palate by Operation in Children." In this I advocated the performance of an operation in early life, and described a species of gag by the aid of which the operation could be done under the influence of chloroform. A plan of operation was also described, more rapid of execution, and entailing less violence on the soft parts, than the method in ordinary use, and therefore more suited to the delicate tissues of young children. The advantages expected to result from the plan advocated were—1. The painless performance of the operation on patients of any age. 2. A much better result as regards articulation when the operation is done in early life than when the cure is postponed until the usual age for operation. 3. The more complete cure of clefts in the bony palate, owing to the more vigorous bone-producing property of the periosteum in early life. The data upon which these expectations were founded were derived from the results in eleven cases—all that I had at that time operated upon. The experience of myself and others during the last two years, and a much larger number of cases, have justified the expectations I formerly entertained.

Cleft soft palate.—The patient was a stunted childish girl, aged thirteen, who was sent to me by Dr. Priest, of Waltham Abbey. Her articulation was very imperfect; the entire soft palate was cleft. On March 27th, 1867, I operated under chloroform at St. Bartholomew's Hospital. Four fishing-gut sutures were introduced; the palato-pharyngeus and levator palati muscles were divided on both sides. The girl was fed on fluid nourishment, and, as she seemed to flag, nutrient enemata were added. Eight days after the operation the sutures were withdrawn, the cleft being completely united and the symmetry of the palate perfect. Dr. Priest reports on Jan. 9th, 1868, the following:—"The girl C——— continues to improve; her articulation is much better; she talks more distinctly; and I am in hopes that in a few months, if she is careful, very little trace of her infirmity will remain."

Cleft soft palate.—S. B——, a girl, aged two years and eleven months, a healthy-looking child, was brought into the Children's Hospital on August 27th, 1867. There was a complete cleft of the soft palate; the hard palate was not involved. The child could scarcely speak. Food and fluids returned through the nostrils when the child swallowed very hastily. The edges were pared, and four sutures were passed, the two lower horsehair, the two upper very fine gut. The palato-glossus and palato-pharyngeus muscles were both notched. The levatores palati were cut; two oblique cuts were made above, as there was at this point some tension. The whole fitted exactly.

The next day (the second after the operation) the eruption of scarlatini appeared; soon afterwards the sutures separated, and the child left the hospital before convalescent, with the wound wholly disunited.

Oct. 11th.—I operated again, using two horsehair and one gut suture.

21st.—Mother reports that part of the palate is united.

Nov. 11th.—I saw the child, and the cure appeared to be complete, except a small hole, as big as a No. 6 shot, just in the middle of soft palate.

12th.—Two sutures withdrawn.

Jan. 9th, 1868.—A small hole about the size of a No. 2 catheter still remains in the centre of the soft palate. The mother reports that the child can "say anything." As this hole does not produce any sort of inconvenience, no further operative measure has been adopted.

L. A——, aged three years and two months, a healthy country child, has a cleft of the entire soft palate and of the posterior part of the hard.

June 1st, 1867.—The edges were pared, and three sutures were introduced, the two lower ones being of fishing gut, the upper of silver wire. Four days after the operation the child was seized with scarlatina; and a day or two later it was evident she had whooping-cough. For a few days the palate remained united; but subsequently it gave way in its whole extent.

Oct. 12th.—I again operated under chloroform; and four gut and one horsehair sutures were introduced. The palato-pharyngei were divided, and oblique cuts were made above.

Nov. 4th.—A considerable part of the velum has united. There still remains an opening in the roof of the mouth, measuring three quarters of an inch in its long diameter.

Dec. 16th.—I passed a horsehair suture through the uvula, and a gut suture in the upper part of the soft palate. Three days afterwards she was attacked with mumps. The uvula has united. The child's power of articulation has much improved.

June 6th, 1868.—The mother reports that she has "given up the idea of having anything more done to the palate, as the child gets on famously with her talking."

Double harelip; complete cleft of the hard and soft palate; eversion of the intermaxillary bone, and deficiency of the columna nasi.—Henry M——, aged five years, was admitted into the Children's hospital August 20th, 1867. Four years before I had operated upon the harelip. At the date of the operation on his palate, the cleft in the alveolar process had united, and almost the anterior half of the divided hard palate had coalesced; there was therefore a cleft of the soft palate and of rather more than half of the hard.

The operation on the soft palate was performed under chloroform on August 20th. Five sutures were introduced, one of silver and four of fishing gut. The levatores palati were divided, and small oblique incisions were made just at the upper part of the soft palate. Seven days afterwards the sutures were removed under chloroform. Three weeks afterwards the soft palate had united, except at its lowest part, and the uvula, which was still cleft.

Oct. 22nd.—His articulation has greatly improved; the hole between the hard and soft palate is diminishing.

June, 1869.—He has good power of articulation, except for sibilant sounds. There remains still a cleft in the bony palate, very narrow, but a full inch in length. He is to come to the hospital in August for the cure of this.

Cleft of soft and half the hard palate.—K. H——, a girl aged four years and eleven months, was recommended to me by Dr. West. The palate was widely cleft, ending in front in a rounded margin, and not running to an angle, as is usual. The palatine arch is high; food and fluids occasionally return through the nostrils, unless great care is taken in deglutition. Considering the amount of deformity, the articulation is unusually good, though indistinct and guttural.

June 12th, 1869.—Under chloroform, the edges of the cleft were pared, the muco-periosteum was detached from the bony palate above, and eight sutures were passed, those in the soft palate being horsehair and the others fine silver wire.

The next day the child suffered severely from chloroform sickness. She only began to take nourishment effectively on the second day after the operation. On the sixth day four of the sutures were cut, and next day were removed. On the eighth day the remaining sutures were taken out.

23rd.—The patient returned to the country with a small round hole at the junction of the hard and soft palate, and a little chink at the anterior angle of the fissure.

July 3rd.—The hole in the soft palate has closed, and there remains a very small opening at the anterior angle of the cleft in the hard palate.

Cleft of hard and soft palate.—Annie W——, aged eleven years, admitted into St. Bartholomew's Hospital on the 21st of September, 1868. She was a feeble, unhealthy child, suffering from deficient circulation. The entire palate was cleft, except the anterior part of the alveolar process. There had been a harelip, which had been closed in early life. Palatine arch very high; soft parts very scanty; articulation very imperfect.

Sept. 21st.—Under chloroform the soft palate was closed with four horsehair sutures. The palato-pharyngei were divided, and oblique cuts were made above to lessen the tension. At the end of a fortnight only the lowest part of the palate had united.

May 12th, 1869.—The child being in stronger health, under chloroform I closed the whole cleft in both the hard and soft palates. There was more tension than one would have wished; but this was owing to the scanty supply of soft parts. The wound was united by several silver sutures.

Four days after the operation one suture was removed; on the fifth day three more were removed; and at the end of a week the ~~rest were taken out.~~

July 6th.—The friends report that there is one very small hole in the hard palate, and one as large as a pea just where the hard and soft palate join. Should these holes not close by the contraction of cicatrisation, a small operation will be sufficient to obliterate them.

Cleft of soft palate in an adult.—W. C——, aged twenty-one, a healthy young man, was admitted into St. Bartholomew's Hospital on the 10th of April, 1869. The entire soft palate was cleft. The posterior margin of the hard palate was also notched; but here the deficiency was bridged over by soft parts. His power of articulation was unusually deficient for one in whom the soft palate only was affected. Under chloroform the palate was united, two horsehair sutures being used for the uvula, and four silver sutures for the palate. At the end of a week all the stitches were removed, and the palate was found completely united. In this case the palato-glossi and palato-pharyngei were greatly hypertrophied. They were, therefore, freely divided at the operation. The levator palati muscles were not cut.

Cleft of the soft palate in an adult from syphilitic ulceration.—E. T——, a girl, aged twenty, was admitted into St. Bartholomew's in May, 1869, suffering from a short, broad, median cleft of the soft palate; it measured about an inch in length, and resulted from ulceration occurring two years ago. Food and fluids were very apt to return through the nostrils, and the voice was nasal in tone.

May 14th.—The edges were pared and brought together by three horsehair sutures, and the palatoglossi and pharyngei were divided. At the end of a week the patient was discharged cured.

Cleft of soft and hard palate in an adult.—A. H——, a woman, aged twenty-four, was admitted into St. Bartholomew's in October, 1867. She had complete cleft of the soft palate, and about half the hard; the cleft was unusually wide, and the soft parts scanty. Her articulation was very indistinct, and her voice most disagreeably resonant.

Oct. 30th.—I operated upon the soft palate under chloroform, closing it with four sutures of fishing-gut, dividing the palato-pharyngei and the levatores palati muscles, and making oblique cuts above to relieve the tension. On the ninth day one suture was removed, and on the eighteenth day the others were taken out. The soft palate had united, but there remained a gap between the hard and soft palate measuring an inch and an eighth in length. three months later this had contracted to less than five-eighths of an inch, when Mr. Coleman was good enough to make for her a vulcanite obturator.

To these instances of the use of chloroform in the cure of cleft palate I could adduce several more, derived from my personal experience. But these are sufficient to establish the fact that, with proper precautions, chloroform is as suitable to the performance of operations on the palate as it is to any other painful and protracted surgical proceeding. In confirmation of this statement I may refer to the experience of Mr. Paget, Mr. Gay, Mr. Adams, Mr. Holden, Mr. Savory, Mr. Callender, Mr. Langton, Mr. Annandale, and, I dare say, to many others who have employed the plan I recommended.

ON A CASE OF

TABES MESENTERICA AND SECONDARY CHRONIC PERITONITIS.[*]

By Edward Ellis, M.D.,

Physician to the Victoria Hospital for Sick Children, Late Physician to the Samaritan Hospital for Women and Children.

William D——, aged four, residing at Battersea, was admitted an in-patient at the Victoria Hospital on April 28th, 1869. His previous history (for the notes of which, as also for many of the observations made during his stay in the hospital, I am indebted to the present house-surgeon, Dr. F. M. Pierce) showed that he had always been delicate. Six months previous to admission he had measles, followed by swelling of the abdomen, which partially subsided. He had no pain during this illness. Two months later the swelling, which had almost disappeared, returned, and continued to increase, without pain, up to the day of admission. Has generally been a lively child, with good appetite. There is strong suspicion of his having had scarlatina; but the mother cannot be certain. He has not had any jaundice since the present illness. Both parents appear healthy, and they have no other child with glandular swellings.

General state on admission.—A small, dark, strumous-looking child; face pale; lips red; angles of mouth sharply defined; the genal lines well marked; cervical glands of both sides much enlarged, the skin being movable over them. There is a eczematous patch behind the right ear. The upper and lower extremities are much emaciated, and there are two or three small ulcerating surfaces between the toes. The ribs are small, elastic, and irregularly ossified. The abdomen is round, much enlarged, and marked by numerous tortuous veins. Measured over first lumbar vertebra horizontally to 1¼ inches above the umbilicus, the circumference was 24·5 in.; from the tip of the ensiform cartilage to the upper border of the pubes, 10 in.; from the umbilicus to the right superior iliac spinous process, 5·5 in. The umbilicus protrudes more than an inch. Fluctuation well marked in all directions. The splenic dulness slightly increased, and percussion at that part is attended with some little pain. By reason of the great distension, the condition of the liver is ascertained with difficulty; the right lobe is about half an inch below the margin of the ribs, and the left lobe extends about two inches down into the epigastric region. Percussion is tympanitic over the right side below the liver. Both lumbar regions dull. The entire abdominal cavity is evidently filled with fluid. The tongue is clean, red, and slightly glazed. The bowels regular; the stools pale, and rather solid. The urine is acid, and of pale, clear, straw color; sp. gr. 1013; no albumen or sugar. Pulse 144, regular; respiration rather, but not notably, hurried; temperature in axilla (10 A.M.) 99·5° F. There is not a trace of œdema of the extremities or over the sacrum. The little fellow remains tolerably quiet, but is occasionally restless. The appetite is good. He is often cheerful, sitting up, and playing with his toys. He was ordered the following mixtures:—Cod-liver oil, lime water, of each one drachm, three times a day; compound scammony powder, compound jalap powder, of each five grains; as occasion may require. Diet, ordinary; port wine, one ounce daily.

May 1st.—His bowels are acting three or four times in the twenty-four hours, better color. Pulse 156, small and weak.

3d.—Abdomen measures, in circumference, 25·5 inches; from pubes to umbilicus, 5 in.; umbilicus to ensiform cartilage, 6·5 in. Bowels regular; very healthy in appearance.

5th.—Abdomen measures 27 inches; pubes to umbilicus, 5 in.; umbilicus to ensiform cartilage, 7 in. No albumen in urine; respiration very fair. Ordered iodine ointment and cod-liver oil, in equal parts, as an ointment, to be frequently applied to the abdomen.

7th.—Pulse 162. The superficial veins much enlarged; no appreciable alteration in the size of the abdomen; temperature in axilla (10 A.M.), 101·2°; appetite good; sleep much broken.

10th.—The circumferential measurement is now 27·5 in.; the rest the same. Bowels regular, the stools being more fluid; slept better last night; temperature 98·3° in axilla (10 A.M.); pulse 148, smaller, regular. The umbilical hernia has increased.

11th.—Has had four or five attacks of vomiting of green biliary matters. Ordered some beef-tea, which he takes well. Bowels act regularly, but the stools are more solid; abdominal measurements continue the same. The umbilicus was ordered to be strapped.

14th.—Temperature (10 A.M.) of axilla, 98°; appetite excellent, but he is evidently weaker. There is some little dyspnœa, and a few mucous râles are audible. Ordered two ounces of port wine daily.

17th.—Increasing feebleness; great sleeplessness. This, with an accession of congestive bronchitis, terminated the case fatally on the 18th.

Autopsy, forty hours after death.—On opening the abdomen three pints of fluid escaped. The position of the viscera was then seen to be natural. —Thorax: Pericardium contained two drachms of clear fluid; heart firm, contracted, normal; right lung adherent over the whole surface, of pale-red color, and a little emphysema at free border; no tubercle at apex or elsewhere; left lung free, congested, of leathery consistence; bronchial and mediastinal glands much enlarged and indurated.—Abdomen: The liver (11¾ ounces) adherent to diaphragm, especially along the round ligament; left lobe enlarged, having on the under surface a large white patch of thickened capsule a sixteenth of an inch thick; gall bladder full; hepatic substance congested; no tubercle. The vessels of the transverse fissure were closely surrounded by enlarged lymphatic glands, but no actual obstruction to the flow of the blood or of the bile could be detected. The great omentum was adherent by its lower lateral edges to the abdominal parietes, with much apparently recent congestion at the junction; the left lobe of the liver was joined with the gastro-splenic omentum to the contiguous portion of the abdominal wall. Spleen (weight 3·5 oz.) very congested; structure normal; no tubercle. Kidneys (weighing 3·5 oz.) very congested, otherwise normal. Pancreas imbedded in a mass of mesenteric glands. Cæcum adherent to parietal peritoneum. No trace of lymph in either small or large intestines. The intestines were limited in movement by the mass of enlarged mesenteric glands, extending down the entire spinal column. The glandular coat was hypertrophied and cartilaginous; the gland-substance firm; no trace of cheesy matter to be seen. The size of the glands varied from a small pea to a walnut, and they were united together in clusters like grapes. There was no tubercle in the intestines, or on any part of the abdominal wall, or in any of the organs, except the glands.

Remarks.—The diagnosis of this case presented features of considerable interest. Being able pretty clearly to eliminate the liver, kidneys, and spleen from taking much, if any, part in the morbid changes, the question seemed to lie between tubercular peritonitis and tabes mesenterica. Still the case did not fit exactly the course of either the one or the other. The absence of pain, in particular, seemed against the idea of peritonitis. The hypertrophied cervical glands would naturally supply a hint in the direction of tabes. Dr. West remarks that in tubercular peritonitis a vague sense of fluctuation may be felt in the hypogastric region, which seems more distinct at one time than another; is never as marked as is the fluctuation in cases of ascites, and is doubtless due (as suggested by MM. Rilliet and Barthez) to the transmission of the shock by the agglutinated mass of intestines from one side of the abdomen to the other. Dr. Churchill says that when the mesenteric glands are affected alone, we shall find neither the abdominal swelling (at least to the same extent) nor the fluctuation of tubercular peritonitis; but if the glands, for example, press upon the thoracic duct, effusion of painless character may take place into the peritoneum. Dr. Abercrombie records cases of chronic peritonitis without any actual pain—merely tenderness giving rise to uneasiness on pressure (which is just what my patient had). The diagnosis of tabes mesenterica complicated with chronic peritonitis was eventually adopted as the probable solution; but I confess I was not prepared to find the peritoneum and intestines absolutely destitute of tubercular deposit. There can be no doubt that the tabes was the primary affection; and as it could not be made out that the vessels at the hepatic notch were in anywise compressed, although surrounded pretty closely by enlarged glands, we have, as accounting for the ascites, the recurrence of slight attacks of partial peritonitis, produced no doubt by the attrition of the hypertrophied glands against the peritoneum. The congestion about the attachments of the edges of the great omentum, in particular, looked very recent. It is probable that it may have actually occurred about the 7th of May, when the temperature in the axilla went as high as 101·2°. Other sites of adhesion looked far less recent, and some were evidently of very old standing. It is also worthy of remark that, although the bronchial glands were notably enlarged, the mesenteric disease outstripped altogether in importance any symptoms to which they may have given rise. Until the final attack of bronchitis, the child suffered remarkably little from cough or dyspœa.

Warwick-street, Belgravia, June, 1869.

◆

CASE OF

PERSISTENT AND ALARMING HICCOUGH IN PNEUMONIA,

CURED BY THE SUBCUTANEOUS INJECTION OF MORPHIA.

By JOHN CONSTABLE, M.D.

ON Monday morning, May 10th, I was called to visit Mr. A——, aged thirty, and after examination found the following state of matters:—The patient had gone to visit a friend, about ten miles distant, on the previous Friday evening, during the prevalence of a cold east-wind. After partaking of supper, he felt very unwell, and retired to bed. In the morning he felt worse, and began, as he himself expressed it, "to cough up and spit blood." On the following day he was brought home in an open conveyance. When I visited him, two miles from my house, on Monday morning, I found him laboring under all the ordinary symptoms of pneumonia of the left lung; decided dulness of the lower two-thirds of the left side of the chest; fine crepitation over the corresponding lung; a copious rusty expectoration; annoying cough; pulse 120; tongue coated and dry; urine scanty and thick, &c. The bowels had been moved with castor oil. His most distressing symptom, however, was a persistent hiccough, which had begun shortly before I arrived. To this symptom, occurring in pneumonia, and its treatment, I wish particularly to call the attention of the profession.

Thinking the hiccough would readily give way after the bowels were moved and the secretions corrected, I paid, at this time, little attention to it, prescribing more especially for the pneumonia. I ordered a poultice of linseed meal and mustard to be applied round the whole of the left chest; a fresh poultice of linseed meal to be applied every three hours: five grains of grey powder, to be followed in the evening by a teaspoonful of Geogory's mixture, and occasional doses of a mixture containing liquor of the acetate of ammonia, spirit of chloroform, and sweet spirits of nitre. Food to consist of sweet milk, chicken tea, &c.

May 11th.—Pneumonic symptoms no worse. The patient had, however, a restless night, more especially on account of the hiccough, which was no better. I now tried various measures, such as pressure, cold draughts of water, sudden alarms, and counter-irritation over the stomach and diaphragm; mustard poultices repeatedly applied. A draught containing thirty minims of solution of muriate of morphia at 10 P.M.

12th.—Pneumonic symptoms going on favorably; but, with very short intervals, the hiccough continuing as severely as eyer, shaking the distended stomach and its contents in a very violent manner, evidently from spasmodic contraction of the diaphragm. The bowels were again freely moved, and various drugs—spirit of chloroform, tincture of opium, extract of belladonna, creasote—received a fair trial without any benefit. Sudden starting, slapping of cold towel over diaphragm, pressure over phrenic nerve, &c.; *but hiccough no better.*

13th.—Patient very much exhausted and distressed, as the hiccough, with scarcely any interval, had continued all night as severely as ever. I was at my wit's end, not on account of the pneumonia proper, which was progressing as favorably as could be expected, but because of this formidable and persistent hiccough. I continued some of the above-mentioned remedies, and asked Professor Bell, of St. Andrews, to see the patient with me in the evening. He confirmed my diagnosis as to the pneumonia, and agreed with me in thinking that, in so far as medication was concerned, it might be left now greatly to itself. We resolved to continue the constant poulticing to the chest, and address our treatment more particularly to the hiccough, which had now reached an alarming extent, and threatened, at no distant period, to kill our patient. Some of the remedies I had been employing received another trial—spirit of chloroform, bismuth, lime water and cold soda water, &c.; ice could not be got. A large belladonna plaster was applied all night over the region of the stomach, and a dose of chlorodyne administered. If these remedies should fail, we agreed to apply a cantharides blister over the region of the stomach and diaphragm, dressing it with solution of morphia; if that also failed, to try the careful inhalation of chloroform, and to keep the patient under the influence of it for some hours, or longer if necessary.

14th.—The patient had slept scarcely any; the hiccough was as bad as ever, and had been so all night. During the day several of the before-mentioned drugs were administered, and the blister applied, as agreed to at the consultation. The patient was now taking very little support, and what little he did swallow was almost immediately rejected by the belching and retching of the stomach, in connexion with the violent and distressing contractions of the diaphragm, which were shaking not only the whole body, but the very bedstead, by their vehemence.

15th.—Finding our patient in a very haggard and prostrate condition when I visited him this morning in company with my friend, Mr. Whitson, a medical student in his fourth year, I resolved to commence carefully, with his assistance, the inhalation of chloroform, as agreed to at the consultation with Dr. Bell, as the hiccough was continuing as bad as ever, in spite of everything that had been done. But before doing so, weighing in my own mind the fact that this hiccough was in all probability produced by spasmodic contraction of the diaphragm, caused by the abnormal excitement or irritation of the phrenic nerve, and remembering the beneficial, almost miraculous, results of the subcutaneous injection of morphia in *nervous* complaints, such as convulsions, sciatica, lumbago, tic douloureux, &c., I determined to give it a fair trial. I had with me a phial of the solution of muriate of morphia and Dr. Alex. Wood's syringe, by which I carefully injected ten minims of the solution under the skin over the intercostal muscles, I presume the arm might have done equally well. It will scarcely be believed, but the fact is, notwithstanding, that in a few minutes, as if by magic, *the hiccough stopped completely, and did not return.* The patient was left, of course, in a very weak and exhausted condition. I administered a dose of chlorodyne at bedtime.

16th.—The patient had a good night, the first for more than a week, and was greatly refreshed. No return of the hiccough. The stomach now retained milk, small quantities of beef-tea, and a teaspoonful of brandy occasionally. Physical examination showed that the pneumonia was progressing favorably. The rusty expectoration gradually got less, and in a day or two lost its rusty color; the pulse counted 80 beats per minute; tongue cleaning at edges, and more moist. In short, from this day the patient slowly, but decidedly, improved uninterruptedly, till at the end of three weeks from the commencement of his illness, he was able to resume his ordinary avocation, though complaining of being easily knocked up from want of strength.

Remarks.—It may be remarked by some that the disease in this case may have reached the crisis on the 15th, and that the hiccough might have given way without the subcutaneous injection of morphia. If so, it was a very remarkable coincidence that within a few minutes of the operation

Nature should have interposed and stopped the hiccough. The patient, a most intelligent person, a teacher by profession, insists that there was no coincidence of crisis in the matter, and that he is quite satisfied the injection of the morphia stopped the hiccough, and saved his life. I am of the same opinion.

Before the above case occurred I had not seen hiccough to any extent *in pneumonia*, and was not aware that it accompanied that disease *as a symptom*. A medical friend has informed me, however, that about a year ago he had in his practice a case of pneumonia very similar to the above, in which hiccough came on on the third or fourth day. All the usual remedies were given without any benefit, and the patient died, he tells me, *of hiccough*, and not of the pneumonia properly speaking. Of course the subcutaneous method of cure requires further confirmation; but I think the facts I have narrated, in connexion with the above case, warrant me in bringing the subject prominently before the profession.

Leuchars, Fifeshire, June, 1869.

◆

ON GRANULAR DEGENERATION OF THE NERVE-CELLS IN INSANITY.

By James C. Howden, M.D.,

Medical Superintendant of the Montrose Royal Lunatic Asylum.

General paralysis of the insane is a disease which presents such a distinct group of symptoms, and has such a definite history, that there is little wonder if it has received a larger share of attention from the morbid anatomist than other diseases of the insane. Many morbid appearances have been chronicled as generally observed in, if not altogether peculiar to, general paralytics. Granular deposits on the arachnoid, adhesion of the membranes to the surface of the cerebral convolutions, crystalline granulations in the lining membranes of the ventricles, unusual amount of fluid in the sac of the arachnoid and in the lateral ventricles, are among the appearances most commonly observed in the brain in general paralysis. Yet no one of these, or no group of them, is invariably detected; while the same changes are found, more or less frequently, in the brains of persons who have not been affected with the disease. In the *Journal of Mental Science* for October, 1866, there is an abridged translation from "Virchow's Archives," by Dr. Blandford, of a paper by Dr. F. Meschede, entitled "General Paralysis and its Organic Nature," in which the author gives what he believes to be its true pathology. "General paralysis," says Dr. Meschede, "seems to be the peculiar degenerative inflammation of the cortical part of the brain, ending in total annihilation of the life—that is, the functional activity—of the part." In evidence of this inflammation of the cortical substance, he refers to the degeneration of the nerve-cells of the hemispheres of the cerebrum as constituting "the peculiar intrinsic pathologico-anatomical change in general paralysis." Mr. Lockhart Clarke, in a short paper "On the Morbid Anatomy of the Nervous Centres in General Paralysis of the Insane," says:—"In the nerve-cells of the convolutions I have frequently discovered certain structural changes, which, as far as I am aware, have not been mentioned by other observers. These changes consist of an increase in the number of the contained pigment granules, which in some cases completely fill up the cell. In other instances the cell loses its sharp contour, and looks like an irregular heap of particles ready to fall asunder."

In the "Annales Médico-psychologiques" for September and November, 1868, a very able paper appears by MM. Poincaré and Bonnet, entitled "Recherches sur l'Anatomie Pathologique et de la Nature de la Paralysie Générale." The authors give a summary of what has been recorded by other writers on the subject, and a very full account of their own observations and deductions, with illustrative cases. The conclusions at which MM. Poincaré and Bonnet arrive on the histological pathology of general paralysis may be briefly stated as follows:—1st. That in general paralysis there is sometimes proliferation of the cellular tissue around the bloodvessels of the brain, but not to such an extent as to lead us to suppose that the functional and material changes of the nerve-tissue are due to defective nutrition. 2nd. That the principal and constant alteration of the encephalon consists in fatty degeneration of the nerve-cells; that there are also sometimes found (*a*) globules of free fat in the grey substance, isolated or agglomerated, (*b*) collections of granulations of a ferruginous tint not surrounded with a common envelope, and (*c*)pigment and hæmatoisin, as well as fat-granules, in the walls of the bloodvessels. 3rd. That there is no change in the spinal cord, save a greater abundance of ferruginous granulations in the cells. 4th. That the cells of the sympathetic ganglia are colored with brown pigment much more intensely than is the case in persons who die from other diseases.

Now, if these appearances were constantly found in persons who die from general paralysis, and in them only, we would seem at last to have arrived at a pretty clear morbid anatomy of the disease. Two questions, then, have to be answered: 1st. are these changes always found in general paralysis? and, 2nd, are they not sometimes found in persons who have not labored under general paralysis? During the last fifteen years I have made microscopic examinations of the brains of a very large number of persons who have labored under all forms of mental disease, and my observations lead me to answer both questions in the negative. At present I will not enter into the detail of particular cases, but merely give the general result of these observations.

First, then, I have met with an apparent fatty degeneration of the grey substance of the cerebrum in some cases of general paralysis and in cases of acute mania without paralytic symptoms, but believe it to be a rare condition.

Second. That in all cases of long standing insanity the cells of the grey matter of the cerebrum present a granular appearance; that this appearance is most intense when the mental excitement has been most severe and long continued, as in general paralysis, epileptic mania, and remittent mania; that it is always accompanied by a deposition of granules of hæmatoisin outside the walls of the capillaries and smaller vessels of the grey substance, and usually by deposits of free granules scattered through the grey substance.

Third. That similar changes in or around the cells are found in all parts of the brain and spinal cord, with the exception of the cerebellum, where the cells are always (?) free of granules.

Fourth. That the granules are not generally of a fatty nature.

A careful examination with a variety of magnifying powers inclines me to think that, in many instances, the granules are deposited, not *inside* the cells, but *around* them, as the hæmatoisin is around the bloodvessels; and I have sometimes noticed them scattered along the fibre coming from the multipolar cells. The granules are unaffected alike by sulphuric ether and strong alkalies. In extreme cases the cell becomes converted into an opaque, yellow, horn-like body, in which no trace of a nucleus can be detected.

While, as I have said, this granular condition of the grey substance may be found everywhere but in the cerebellum, it can be studied more readily in some parts of the nervous centres than in others. As, for example, in the convolutions on the vertex, the convolutions above the corpus callosum, and in the cells of the grey matter at the lower part of the spinal cord.

Until reading the paper of MM. Poincaré and Bonnet, I had not examined the cells of sympathetic ganglia, and since then have not had many opportunities of doing so. I have, however, found in persons who have not died of general paralysis appearances similar to those described by them.

How far this granular change in the nerve-substance is compatible with healthy mental action is a point yet to be determined. I am disposed to think that this change will be found to a certain extent in persons in advanced life, and that, in many cases, it is the result of the aging of the cell, so to speak; just as atheroma and ossification of the arteries are changes incident to advanced life. This view, however, does not invalidate the importance of the fact, that in cases of insanity accompanied by violent cerebral action of considerable duration a very decided change takes place in the condition of the ganglionic cells—a change accompanied by an alteration of the vessels of the grey substance, and succeeded by the usual evidences of brain decay—shrinking of the grey and white matter, œdema of the brain, excess of fluid in the sac of the arachnoid and in the lateral ventricles, thickening of the membranes, and dementia.

It is perhaps too much to expect that the microscope will enable us to discover the alterations in the brain which produce mental derangement; but that it reveals to us changes in the nerve-substance, as a consequence of that condition, changes incompatible with healthy mental action, I think certain. There is in this department of histology a vast field untrodden, and one which will not fail to repay the earnest worker.

In conclusion, I would urge observers not to depend on prepared sections. The brain should always be examined, in the first instance, *as fresh as possible*. Some of the more delicate alterations of structure disappear after a prolonged soaking in spirits, whilst the slightest decomposition renders the appearance extremely fallacious. Again, observations should not be made too exclusively on the brains of paralytics and other *interesting cases*. If possible, the brain should be examined microscopically in every case where a post-mortem is made in an asylum. It is only in this way, and by the labor of many workers, that we can expect to ascertain the frequency and true value of pathological appearances such as I have referred to.

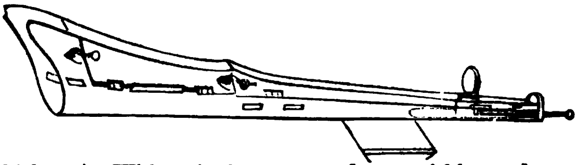
◆

DESCRIPTION OF AN

IMPROVED SPLINT FOR THE LOWER EXTREMITIES.

By D. W. Williams, M.D.

Having constructed an apparatus, or universal splint for the lower extremities, acting on quite a novel principle, I am induced to bring it before the notice of the profession. I was led to turn my attention to the subject from the difficulty often experienced in country practice with splints in common use, amongst which may be enumerated Liston's long splint for fracture of the femur (which cannot be too highly estimated in the hands of the experienced, possessing ordinary mechanical ingenuity, under favorable circumstances), owing, particularly in union practice, to paucity of room, and ill-constructed bedsteads, with beds and mattresses of anything but even surface. Also the less frequent visits, necessarily arising where the distance is considerable, place the patient in a position very unfavorable as compared with that of those living in towns, or enjoying the advantage of treatment in hospital, the inmates of which are always under the immediate supervision of the medical attendant; so that with the best-directed efforts, and proper application of splints, deformities will sometimes take place in country practice, in the hands even of the most expert and experienced.



Without in the remotest degree wishing to detract from the many ingenious contrivances for fractures of the lower extremities, I feel convinced that my splint, from its simplicity of action and universal adaptability, will obviate the necessity for any other form. This sketch will at a glance demonstrate its *modus operandi*.

It is made of three pieces of deal board, 3½ feet long. The lower one, which I propose to call the *leg-rest*, is scooped out internally, for the thigh and leg to lie on smoothly; externally, it is flat, to rest evenly on the bed. Two side pieces, about five inches long, are glued on each side of the upper end of the leg-rest, forming a lunated crutch at their free extremity, completed by the free upper extremity of the leg-rest. This crutch is well padded with sponge, covered over with wash-leather tacked to the splint, which forms an easy resilient cushion to surround the upper part of the thigh, resting against the fold of the nates, and embracing the side of the perineum, the rami of ischium, and the pubes.

This is the most important part of the apparatus, and one for which I claim novelty of construction and action; not being aware of any other extending power but that of the perineal band from the pelvis, whereas in my apparatus the action is reversed, the perineum and pelvis forming the point of resistance from extension by screw action from the foot. Two mortises will be seen at the junction of the leg-rest and crutch-pieces, about two inches long, on each side, for the passage of a silk hankerchief or bandage to secure the upper part of the thigh well to the splint.

From these lateral *crutch-pieces* there are two side splints tapering off to the heel, but divided about the centre at the knee-joint, to allow of their independent action, and attached to the leg-rest, at either extremity, by hinges, which are convenient for unfolding to dress the limb in compound fractures, &c., or to allow of bandaging the limb to the leg-rest in very thin subjects. There are also two sets of mortises at the knee, on each side, for the passage of bandages to secure the limb for extension in cases of fracture of the leg. There is a long thin mortise extending from above the knee to nearly the crutch-piece on either side, measuring six or seven inches between the hinged parts, for the passage of three folds of bandage, sewn together six or seven inches wide, one end of which is first tacked below the slit on one side, passed through, over the front of the thigh, and through the slit on the other side, from within outwards, to be secured below by a few tacks, or brought round to the front again and there secured. Padded auxiliary splints may be found useful or necessary in fractures at either extremity of the femur, placed under this and the crutch bandage, and firmly secured.

There is at the extreme end a thick piece of oak board, placed transversely, below the centre of which a long wooden screw passes through a female screw, to be attached to the foot-board, which slides on the sides of a space of about twelve inches long by two and three-quarters broad, sawn out of the leg rest, to allow of any disparity in length of limb, and broad enough for the heel to move in freely.

The foot being secured by a few turns of bandage round the ankle and instep, cotton wadding having been first folded on the ankle and foot, the limb is fixed to the foot-board, first by passing the bandage through the notches on each side near the heel, which prevents it from slipping upwards, and afterwards bandaging the foot securely to the board up to the toes. The crutch-bandage having been made secure, extension is made by steadily unscrewing the screw—rather a primitive, home-made contrivance, which could doubtless be improved upon, both as regards elegance and facility of application, by some of the London instrument makers. A thick board is placed transversely below the centre, eighteen inches in length by twelve in breadth, which prevents the possibility of any displacement, or rolling on the most uneven surface. Any extemporised piece of board would answer the purpose, so that it is not absolutely necessary it should be fixed to the splint, which makes it less portable. There are hinge joints between the heel and foot boards, to allow of its being folded into the splint for portability.

To recapitulate. I claim for the apparatus—

1st. Ease of application in the hands of the inexperienced, and those wanting in mechanical skill.

2nd. The even, regular, general support afforded by Macintyre's splint, or double inclined plane, together with extension, so that both limbs can be always compared as to length.

3rd. Very superior advantages in affording means of dressing in compound fractures and resection of knee-joint, without relaxing extending force.

4th. Nicely adjusted screw-extension power.

5th. Adaptation to any fracture, from hip-joint to ankle, to any length of *adult* limb, and to both sides.

6th. The very gradual, easy screw action, rendering extension in hip and knee-joint diseases highly advantageous, preventing tension, and attrition of the inflamed articular surfaces, with the general and regular support the splint affords. The former on the principle inculcated first, I believe, by Paget and Prescott Hewett, and practiced, by weights and pulleys, in the case of the Princess of Wales; the latter on the principle of *rest*, advocated by Scott, and more recently, in a most able and exhaustive manner, by Hilton.

7th. Aneurismal clamps may be fixed to any part of it.

8th. Subjects with excessively feeble circulation can be treated without the fear of sphacelus from tight bandaging, or indeed without any bandaging whatever, if in any way contraindicated.

The thigh piece is fitted with two lateral pads, made of soft swan's-down calico, stuffed with two layers of cotton wadding, joined together in the centre by one layer of the same material four or five inches wide, which is tacked to the floor of the leg-rest. The free edges of the lateral pads are made to project somewhat over the edges of the side splints, and loose, to allow of any soft material being placed between them and the splint, and for the bandages &c., to pass through the slits. The leg-piece is supplied with the same.

To conclude: shortening or any other deformity is rendered almost a matter of impossibility with ordinary care, thus depriving bonesetters, and their abettors, which are not a few, of the extreme felicity of chuckling at the practitioner's failure—a frequent result, however, of their own malpractice, but which, with accustomed proclivity for quackery in general, the public so readily ignores. I am not without hope that my humble efforts may assist, in a slight degree, to reduce deformities to *nil*, which, it cannot be denied, although often unavoidable, are standing opprobria to the qualified practitioner.

Menai-bridge, Bangor, July 8th, 1869.

◆

SOME OBSERVATIONS

ON THE OPERATIONS FOR EXTRACTION OF STONE PERFORMED AT THE LEICESTER INFIRMARY,

CONTAINING A STATISTICAL ACCOUNT OF THE LATERAL AND MEDIAN METHODS.

By Thomas W. Benfield, F.R.C.S.,

Senior Surgeon to the Infirmary.

Concluded from October number—p. 533).

Sir H. Thompson gives a table of 1827 cases of lateral lithotomy, with 229 deaths, or 1 in 7·977—

nearly 1 in 8; and I am gratified to find that the Leicester Infirmary ranks second only to Cambridge. But I will mention all the hospitals with their results.

	Cases.	Deaths.		
Norwich (Crosse)...	669 ...	91,	or about	1 in 7⅓
Since that time ...	124 ...	15	"	1 in 8¼
Oxford	110 ...	14	"	1 in 8
Leicester	90 ...	8	"	1 in 11
Leed	29 ...	4	"	1 in 7¼
Birmingham	102 ...	10	"	1 in 10
Guy's Hospital ...	230 ...	33	"	1 in 7
St. Thomas's Hospital	200 ...	29	"	1 in 7
University Col. Hosp.	90 ...	12	"	1 in 7½
Cambridge	183 ...	13	"	1 in 14
Total	1827 ...	229		

It is but just, however, to say that such a table is incomplete without more detailed statistics as to age &c.

Mr. Martineau, of Norwich, is reported to have operated on 84 cases, with only two deaths (Sir H. Thompson); and I am informed by my friend Mr. Fullagar that his operation was by the lateral method, with curved staff and knife, and by dilatation of the prostate with the blunt gorget.

Mr. Allarton records 139 cases of median lithotomy, at all ages, with 13 deaths (Sir H. Thompson), or 1 in 10 9-13.

"De Borsa declares that of 100 cases operated upon by him and Manzoni, by the latter's median method, only one died, and that from causes irrespective of the operation" (Mr. Allarton).

The operations performed at the Leicester Infirmary by the present surgical staff, and not included in Sir Henry Thompson's table, are as follows:—Median operations, 57, with 3 deaths, or 1 in 19; of these, 9 were adult, or above seventeen years of age: the deaths were two adults and one juvenile. Lateral operations, 12, of which 11 were cured, and 1 adult died, aged sixty-seven. The grand total is 69, with 4 deaths, or 1 in 17. The result is, in median operations, 1 death in 19; in lateral operations, 1 death in 12. And comparing these with the statistics of the Leiçester Infirmary given in Sir H. Thompson's table, all of which operations were lateral, it stands as 1 to 11 in that table, and 1 to 17 in our mixed operations subsequently performed; but in taking our median alone, as 1 to 19 against 1 to 11 lateral.

To economise time, I will not enter into further comparison of the two methods, but rather refer you to my statement, because I believe that the Italian and its modification in the median, or Allarton's method, have not had the due consideration by the profession to which they are entitled.

I do not regret to say that I have had very few opportunities of judging whether or not the prostate gland has been lacerated or overstretched in the extraction of stones by the median operation. I can only say that I have never had any ocular demonstration of that fact, nor have I met with any statement to that effect as proved by post-mortem examination; but this is a question which must be decided by experience.

When I consider the structures divided in the median operation, as compared with those divided in the lateral, and at the same time weigh the results of our smaller number of operations with the more generally adopted lateral, I think I have reason, in properly selected cases, to continue its use, and to bring it under notice as worthy your consideration. In my own two cases which died the stones were not large, the extraction of them was easy and, there was nothing to lacerate the prostate; and in Mr. Marriott's single median death, abscess and peritonitis occurring suddenly at the end of three weeks, give but opposing evidence to the frequency of such a result.

Next, in respect of hæmorrhage I must say a few words. In one case only out of 25 median operations have I had occasion to use the lithotomy tube or to ligature; but in one lateral out of 9 I was obliged to secure two vessels on account of sharp bleeding. Now I think it is but just and honorable to say why, in my opinion, the hæmorrhage followed by death occurred in that median operation; and it was this: the perineum was deep, and I failed at first to hit the groove in the staff, and the blade of the knife passed by the side and beyond the urethra, probably wounding the artery of the bulb or some artery abnormally distributed. In no other case have I encountered primary hæmorrhage which was not easily controlled, or in which I had occasion to ligature or to use the tube.

On referring to Mr. Marriott's notes, which he has kindly given me, I find that he had occasion to use the tube twice in his *median* operations, and both recovered; and in three cases there was smart hæmorrhage, requiring ligatures; but in *two* out of his *three lateral operations* there was *severe hæmorrhage*, requiring the plug, and one of these patients died from pyæmia in seven days, and in the third case there was free venous hæmorrhage. I have once had secondary hæmorrhage in a child, which occurred on the tenth and eleventh days after the median operation, and which was so severe as almost to threaten death. This was controlled by ice applied to the perineum and by the internal administration of gallic acid, and the child recovered.

Mr. Thomas Smith, of St. Bartholomew's Hospital, in a paper lately published in the *British Medical Journal*, quotes 20 lateral and one median, all in children, in all of which he introduced the lithotomy tube; and he recommends its use in all cases as a preventive of hæmorrhage. But, from my own experience, I think this unnecessary; and, if unnecessary, objectionable. Nevertheless, all his cases were successful.

In two or three cases I have observed, in my own practice, orchitis of one or both testicles following the median method, and which I do not recollect to have seen after the lateral operations. These somewhat retarded the recovery, but occasioned no further inconvenience.

In two cases—one lateral, the other median—liquid fæces passed per urethram; and in one of them, the lateral, flatus also escaped by the same passage. In the median it occurred in a boy twelve years old on the thirteenth day after the operation; in which case the stone was rough and large, and composed of oxalate of lime. In the lateral case, which was a complicated operation on account of the extraction of two large phosphatic calculi, combined with stricture of the urethra, flatus passed by the urethra at the end of three weeks, accompanied by liquid fæces. But both of these recovered completely without further surgical interference. In neither of these was the rectum wounded by the knife; but, as I infer, from sloughing occurring after the operation. In this latter case the man, aged thirty-two, had been the subject of stricture for several years; and although I had dilated the stricture gradually for seven days prior to the operation, I was unable to introduce the curved laterally-grooved staff, and, whilst on the table, I first opened the stricture by Thompson's dilator, and then readily passed Aston Key's straight staff. The first stone, for there were two, was removed after prolonged careful extraction; but I was compelled to crush the second by the lithotrite, as it could not be extracted without using undue violence. And here I may remark, that this latter proceeding is one which Sir H. Thompson condemns as dangerous in a bladder entirely empty of urine; but with the exception of the sloughing before mentioned, and which in my opinion was entirely independent of the use of the lithotrite, no untoward symptoms followed, and the man recovered.

I ought to add, that upwards of thirty operations were performed by my late colleagues, Messrs. Paget and Macaulay, since the year 1851; but I have been unable to obtain satisfactory details as to the method adopted, and therefore they are not included in my table.

◆

ABSCESS OF THE LIVER.

A NEW TREATMENT, EMPLOYED SUCCESSFULLY IN FOUR CASES.

By H. Blanc, M.D., M.R.C.S., F.R.G.S., &c.,

Staff Assistant-Surgeon, Bombay Army, Etc.

(Continued from October number—p. 529.)

A caustic issue was some years ago a popular remedy amongst the poorer classes in France. As a consequence of this practice, the dissecting-rooms frequently received subjects who had during their lives been the bearers of such issues. They were generally situated in the deltoid space, or in the upper and inner part of the leg. With a very few exceptions, potassa fusa is the substance used in France to establish a fonticulus. On dissecting the part where the issue had been applied, the following characters were generally found, varying only in intensity according to the more or less ancient date of the discharge. The surface was irregular, consisting of large, soft, and spongy granulations, of a darker hue than the fundus; the surrounding skin was thickened, giving, on section, a white, densely granulated surface. The subcutaneous cellular texture had more or less disappeared; the muscular texture was considerably atrophied, and an intimate adhesion existed between the different layers of texture formed by deposited and organised lymph. The bloodvessels were greatly hypertrophied, and the capillary vessels attained the dimensions of small arteries and veins.

We have here, if I am allowed to use that expression, the morbid anatomy of the caustic issue, the principal features of which can be summed up in the following three important points; absorption of the cellular texture; intimate adhesion of the different textures by organised plastic lymph; and considerably increased vascular action.

If we now examine the immediate effects of caustics on the living body, we shall find that they agree with the results observed after death.

Inflammation is, in the abstract, but the consequence of the natural heat of the body and of the chemical properties of the blood. That no inflammation can exist without the powerful influence of vital heat, increased in some cases, localised in others, is a fact now beyond doubt.

Cold-blooded animals are not liable to inflammatory action; and that long-repeated error of physiology which consisted in studying the effects of inflammation and the transformation of globules in the frog has brought to light nothing but phenomena of exosmose and endosmose, produced by the irritant applied to a delicate membrane.

By the subtraction of the primary cause of inflammation, vital heat, even in the human body, inflammation becomes impossible, and if none of its organic consequences have as yet appeared, inflammation being arrested in its onward march, the inflamed parts soon return to their normal condition. This law is of immense importance, and, applied to the acute stage of any inflammatory disease, produces the most astonishing results.

But caustics, especially those that combine with our textures, not only increase locally the normal heat of the body, but generate it, affording us, therefore, the first required condition in order to induce inflammatory action. On the other hand, inflammation will assume special characters owing to the chemical reaction of the fluids, as we are now going to explain. This chemical reaction of the blood and other fluids undoubtedly plays a great part in the character inflammation assumes. This reaction is brought to light by many of our ordinary medicines. For example, cantharides inflames the mucous membrane of the bladder, and even this membrane in a particular manner; belladonna acts on the pharynx; iodine on the palpebral and olfactive mucous membranes; mercury on the buccal and gingival membranes, &c. Moreover, if these inflammations differ by their tendency to effect certain organs or parts, their intimate nature is quite as distinct, some presenting all the attributes of a catarrhal or specific inflammation, often of the common and simple form. Following the same law, caustics, such as potassium and sodium, combining with our textures, induce adhesive inflammation on the parts to which they are applied.

Let us go a step further towards the solution of our problem, and, from the effects of caustics on the healthy tissues, examine also their action when disease is present. It would, in fact, often be incorrect to judge from the effects on the healthy body of the ultimate virtue of any remedy. This we see every day. Digitalis at high doses is a deadly poison, but can be given in delirium tremens in the very same poisonous doses, not only with impunity, but with great success. Arsenic, the popular poison, has been prescribed in grain doses in intermittent fever, and apparently with no baneful results. We must, therefore, not be astonished if an agent which destroys and disorganises our tissues can also repair and reproduce them; and that the alkaline caustics, though burning and decomposing the integument, will at the same time alter a pus-generating membrane into the highest of all, the very one forming the basis of our organisation.

But I must be permitted another short digression from my subject. The proposed remedy for hepatic abscess is no sudden inspiration nor chance treatment, but the natural deduction of the combined action I have just explained—namely, the proof the scalpel brought so frequently and so clearly before my eyes, and, above all, the direct experimentation on diseases which have a close connexion with hepatic abscess. From 1852 to 1854 I was first house-surgeon of the Toulon Hospital (France). At this time large railway works and public buildings were in course of construction; the ramparts were pulled down, and the city ditches filled up. In these works thousands of men were constantly employed, the greater part being unskilled peasants or ignorant Piedmontese. A bruise or a cut was overlooked; and cases of diffuse cellular inflammation were constantly being admitted into the hospital. Not aware of the gravity of the disease, these men came to the hospital only when the greatest of surgical operations was too often the only remedy that could be offered to a reluctant patient. The caustic paste had at last its trial on a limb literally turned into a bag of pus. Thirty caustic issues were applied, extending from the ankle to the hip. The dying man recovered. This success was so complete that, ever after, this treatment was adopted; and, during the remainder of my stay, not one case of amputation took place on account of diffuse cellular inflammation. I have never seen the remedy fail. When applied late, and when destruction of the cellular tissue had already partly taken place, the mortified parts were first eliminated through the openings made by the caustic. But in less advanced cases, however intense the phlegmonous inflammation might be, if no mortification was present, shortly after the application of the caustic paste, plastic inflammation would supervene. The pus was rapidly absorbed, and a prompt recovery the result.

(To be concluded.)

◆

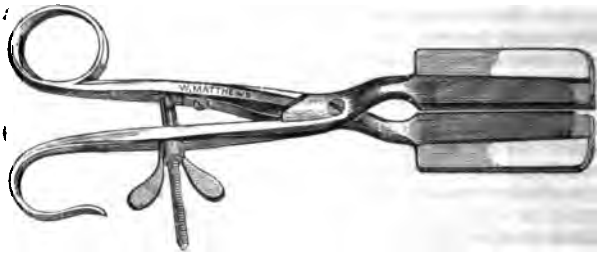
DESCRIPTION OF AN IMPROVED HÆMORRHOIDAL CLAMP.

By **Henry Smith**, Esq., F.R.C.S.,

Assistant-Surgeon to King's College Hospital.

Some twelve months since I introduced to the notice of the profession, through the pages of The Lancet, a modification of the hæmorrhoidal clamp, consisting of the addition of a plate of ivory to the backs of the metal blades of the instrument. At that period I had tried the clamp so modified in a sufficient number of cases to lead me to see that this addition of the non-conductor of heat was a very great improvement. The further experience of a large number of cases, both of hæmorrhoids and prolapsus, has convinced me that the clamp should never be constructed without the ivory plates; for in those cases where it is not desirable to exhibit chloroform, or where patients will not inhale it, if one of these instruments be used, the actual cautery may be applied so that it is impossible for the patient to know what is being done. And the object of the communication is to show how this has been effected.

It will be remembered that when I first employed the ivory lining it was made simply to cover the lower surface and the sides of the blades of the clamp; but some little time since I requested Mr. Matthews to extend the ivory beyond the limits of the clamp, on either side and at the upper extremity of the blades, for half an inch. (See Fig.) By this means the non-conducting surface is very much increased, and unless the cautery is applied very carelessly, or kept in contact with the instrument an inordinate time, it is impossible, as I have above stated, for the patient to know when the hot iron is being used.



As a somewhat amusing illustration of this fact I may mention that recently I was operating on a very severe case of internal hæmorrhoids, and the patient had beforehand expressed great dread of the cautery; but I had assured him that in all probability he would not know when I applied it. After I had used it very freely, and finished the operation, my assistant went to the fireplace to take out the cauteries. The patient, catching sight of these formidable tools, immediately began to exclaim vehemently that I was going to apply the iron. His astonishment and gratification may be imagined when I told him the process was finished. This little incident by itself shows the value of the ivory plates.

Of course, if chloroform be used it is not necessary to employ the clamp with the ivory blades, although I would recommend that the instrument should always be constructed with this addition.

Wimpole-street, Cavendish-square, July, 1869.

◆

ON A CASE OF

EXTENSIVE WOUND INTO THE TARSO-METATARSAL ARTICULATION, WITH THE EXTENSOR TENDONS DIVIDED.[*]

By W. S. J. H. Munro, M.D., M.R.C.S. Lond.

Edward B——, of Pond Farm, Faukland, a healthy boy, seven years of age, got injured by a reaping machine on the 11th of June, 1869, his right foot being caught between the second and third external teeth of the knife, and his body hanging forward over the machine whilst in motion, six or seven yards being traversed before he could be extricated.

I saw him forty minutes after the injury, when the bleeding, which was at first considerable, had ceased. The strong boot and woollen stocking were both cut half through on their upper aspects, completely saturated with blood, and covered over with pieces of skin and tendon. On examining the foot, the tarso-metatarsal articulation was completely sawn open, the dorsal and interosseous ligaments torn, and all the extensor tendons cut; the wound commencing on the inside at the sole of the foot, and from thence running upwards and outwards across its dorsum to the base of the fifth metatarsal bone, laying the joints completely open, and allowing the entire metatarsal part of the foot to drop (when unsupported) into a line with the leg.

---

[*] Communicated by Sir William Fergusson.

The parents (though when the boot and stocking were removed they declared that they could see through the sole of the foot) would not hear of amputation; so I at once closed the wound (after carefully washing out the synovial cavities) with silk sutures and strips of adhesive plaster, laying over all a cold-water dressing, and supporting the foot.

June 14th.—All gone on well since the accident. Have now removed the plaster and dressing, and covered the foot over with a liniment composed of one part of rectified spirits of turpentine and two parts of hog's lard.

19th.—There is the slightest appearance of suppuration on the surface of the sore to-day; so the liniment is made with twice the proportion of turpentine.

28th.—No sign of suppuration since last report. Wound now nearly healed. The sutures have not yet come away.

July 2nd.—Sutures now removed; wound all but healed. A few small vesicles containing clear fluid have to-day appeared over the course of the wound. Ordered to discontinue the turpentine, and use cold-water dressing instead.

9th.—Wound now quite healed. He is able to get out of doors a little; but not yet allowed to bend his foot.

19th.—The boy is now convalescent, and daily regaining the use of the extensor tendons.

Radstock, near Bath, July 19th, 1869.

A Mirror

OF THE PRACTICE OF

MEDICINE AND SURGERY

IN THE

HOSPITALS OF LONDON.

> Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

GUY'S HOSPITAL.

(PATHOLOGICAL DEPARTMENT.)

CASE OF CASUAL ASSOCIATION OF SEVERAL INDEPENDENT DISEASES, ONE OF WHICH WAS CYSTITIS FROM LATENT STRICTURE.

(Autopsy and remarks by Dr. MOXON.)

THIS case very strikingly instances the chance occurrence of several diseases in one patient. We generally at the bedside endeavor to bring all the symptoms together, so as to infer from them all the one particular diseased state which is their common foundation; and generally we may say that the post-mortem supports our conclusion. Nay, the tendency of post-mortem inquiry, generally may be said rather to increase our disposition, as it certainly increases our ability, to infer correctly the common cause that underlies a variety of symptoms. Remarkable exceptions to this rule, such as the instance before us supplies, are of especial interest; for the diagnosis of two independent pathological series in one patient requires either great presumption or great circumspection.

The case inspected had been under Mr. Birkett's care for psoas abscess. On his admission he was a fine soldierly-looking man, a Light-Dragoon drill-sergeant. He had a tumour at the inner and upper part of the thigh. It had existed for about eight months, and for relief he had worn a truss on it. Mr. Birkett's examination proved that it was a psoas abscess. The course of this was accurately made out by Mr. Birkett during the life of the patient. It was treated by repeated tappings, large quantities of matter being drawn off. He gradually became much emaciated, and sank through exhaustion. He never mentioned having had gout, and he never made any complaints of difficulty in passing his urine. He suffered some pain in passing his motions for the last three weeks.

On inspection, his frame was much wasted. The skin was tawny, but not darker than would answer to the color of his hair, which was blackish-brown; the moustache mingled black and tawny; the iris dark grey. There were no patches of darker color; in short, he was free from the discoloration that constitutes melasma, although he was rather dusky. The third and fourth lumbar vertebræ were found to be diseased; they appeared as if crushed together, the intervertebral substance totally gone, and the remote half of each vertebra brought together, except here partly separated by the necrosed relics of the near halves, which were in the shape of pieces of dead bone of the size of hazel-nuts, generally separated from that which had been living by gelatinous granulations, but at a few points still united to it. The cauda equina was not disturbed; the arches of the two vertebræ were anchylosed together. The necrosed bone presented into the psoas abscess on the right side. The right psoas was almost wholly destroyed by the abscess, whose channel pushed outwards the anterior crural nerve, and came down under Poupart's ligament outside the vessels, and then, as usual, crossed under the femoral vessels to the point of presentation, where, the external openings, were situated in the inner and upper part of the thigh. The left psoas had another abscess that descended within it as low as the middle of the brim of the pelvis; from this abscess an extension spread down about the internal iliac vessels towards the rectum (this had occasioned the pain in defecation). The peritoneum was partly studded with tubercles; these were curiously limited to the lower half of the membrane, the situation corresponding to the zone of the trunk whose vertebræ were diseased. Dr. Moxon had observed such a limited development of peritoneal tubercle before in a case of large tubercle within the spinal cord at a point of its lumbar portion corresponding to the lower peritoneum, as though the nerves had caused it. In either apex of the lungs there was a small relic of tuberculous disease, and a few small recent tubercles around one of these relics. The state of heart attracted attention. It was not wasted in proportion to the wasting of the body, yet its valves were healthy. It weighed nine ounces and a half, and it should have weighed only five or six. The left vertricle was disproportionately large. This drew immediate attention to the kidneys and great toes. On turning to the latter, gouty degeneration of cartilage was found. There was a plentiful deposit of urate of soda. The kidneys were rather small; their capsules were thickish, and their cortical part showed its pyramids certainly confused; a few cysts were present; a white spot of urate of soda was to be seen in the pyramid here and there. The kidneys showed, however, another distinct diseased state. There were parts of the cortex deep-red, swollen, and softened, showing early phlegmonous inflammation, which does not arise from gouty degeneration. The pelves, too, were inflamed. The bladder being examined, it was found intensely inflamed, with deep purple patches on all the prominences of its rugæ from ecchymosis and puriform urine. The muscular fibres were seen to be hypertrophid, and the prostatic part of the urethra much dilated. The penis was removed, and a stricture was found at the bulb such as would scarcely allow a No. 1 catheter to pass. The inflammation of the urinary passages was thus explained. The supra-renal bodies were now seen to be much diseased. The left was of the size and shape of a walnut, and its substance was nearly made up of caseous tubercle; the cortical part remained in patches, and miliary tubercle was found in these relics. The right capsule had a nodule of cheesy tubercle in it as large as a hazel-nut; the rest of the capsule was healthy, but had no fat in its cells. Lastly, the pharynx at the back of the larynx had a circumscribed slough of its tissue over the cricoid; the slough was greenish and sunken, its edge bright purple-red and swollen; and the glottis was considerably œdematous; the œdema glottidis it was that had put an end to the progress of the poor fellow's museum of diseases.

Dr. Moxon remarked on the independent manner in which each of the four several pathologies which the man presented had followed its usual course indifferent to the rest. We had three distinct pathological series. Which was the oldest, one could not say. Gout had damaged the joints and affected the kidney; and then gone on in the usual course to the heart. The insidious nature of these changes was well illustrated. In Guy's Hospital post-mortem theatre gout is very frequently found to be the latent cause of fatal disease. Then tubercle had attacked the lung and been healed, and again, in its usual creeping manner, had formed in small clusters around the scar. The lumbar vertebræ—or rather intervertebral substance first—had then been invaded, and after these, in curious topical relation to the vertebræ, the lower peritoneum and the supra-renal capsules. The anatomical conditions of Addison's disease were perfect in kind. In degree or stage they gave a valuable opportunity of studying the nature of the process in its activity. We generally see only the remnants or consequences of the disease. Dr. Moxon has made a drawing of the capsule and its microscopic appearance for the post-mortem theatre. Again, the series of results from stricture is complete and characteristic; but it is very important to note the fact, that this man let his stricture cause, what would probably have been alone fatal, renal disease without saying a word about it. Dr. Moxon has seen no less than four cases in which suppuration of the kidney had been set up by strictures which the patients never mentioned. The last of these cases was singularly interesting. A man was admitted with acute rheumatism; he became comatose, his urine passing under him, and he died. The case was viewed as cerebral rheumatism; yet latent surgical suppuration of the kidneys from stricture was, after death, discovered to be the real cause of the fatality. This is a point very well worthy of the attention of physicians and surgeons. The other day a woman died at Guy's Hospital of similar suppuration of the kidneys, caused by the pressure on the bladder of a prolapsed uterus. The typhoid symptoms of the nephritis were the first intimation of her danger. The slough behind the larynx is an unusual and interesting thing.

◆

ROYAL FREE HOSPITAL.

CASES OF INGUINAL HERNIA; OPERATIONS FOR THE RADICAL CURE; RESULTS.

(Under the care of Mr. John D. Hill.)

Occlusion of the inguinal canal is the object which is desired in every operation for the radical cure of an inguinal hernia, and however much surgeons may differ as to the *modus operandi*, this is the leading principle. In the respective contributions to this subject by Mr. John Wood, Profs. Fayrer and Syme, MM. Bonnet, Watzer, and Gerdy, several most ingenious methods have been devised. It is therefore desirable, in a question of such practical importance, to record all cases which have been submitted to the curative process, in order that the kind of cases suitable for operation, and the relative merits and advantages of particular operations, may be made known.

The following notes are from Mr. Hill's casebook. The patients were severally operated upon after the methods which have been described by Mr. John Wood and M. Gerdy. The condition nine months and twelve months respectively after operation is given.

Case 1.—Henry C——, aged twenty-three years, by occupation a laborer, was admitted into the hospital June 8th, 1868.

History.—About three months previous to admission, while employed in lifting timber, he felt something suddenly give way in the right groin. This was followed by swelling and tenderness at the seat of injury; the latter, however, soon passed away, while the former continued to increase gradually, but always disappeared on his assuming the recumbent posture. Since the accident he had never been free from pinching pain in the bowels on attempting to lift even an ordinary weight; and at last, being quite disabled, he came to the hospital. He had never worn a truss.

Present condition.—A hernial tumour about the size of a walnut projects at the external abdominal ring, which can be reduced by gentle pressure. When the forefinger is passed into the inguinal canal, invaginating the scrotal coverings, the margin of the internal ring can be distinctly felt. This is stretched towards the mesian line, while the external ring is drawn outwards, and thus the obliquity of the canal is reduced. On measuring its capacity, the forefinger and tip of middle finger can be inserted within the external ring. The hernial sac apparently contains intestine.

Treatment and progress.—To-day (June 12th), after the bowels had been freely relieved by a purgative, Gerdy's operation was performed in the following manner:—The patient being in the recumbent posture, the right forefinger of the operator was passed into the inguinal canal, tucking up a sufficient quantity of the scrotum to prevent any tension or dragging upon the suspensory wire when inserted. He was then requested to cough sharply, and by the impulse thus communicated the intestine was found well guarded by the finger. Next, a strong curved needle, armed with stout silver wire, was guided along the finger, and thrust through the invaginated scrotum, conjoined tendon, and inner pillar of ring, transfixing the integument an inch above Poupart's ligament. The needle, having been disengaged, was now attached to the lower end of the wire, and again guided along the finger through the invaginated scrotum, outer pillar of ring, and integument, appearing just above Poupart's ligament. The wire was now made tense, and retained so by an assistant, whilst a coil of strapping of the thickness of a No. 12 bougie was attached to either end, and rolled home. A pad and spica bandage completed the operation, after which he was removed to bed, and ordered twenty minims of tincture of opium.

June 13th.—Complains of pain in the course of the inguino-cutaneous nerves. Ordered twenty minims of tincture of opium every four hours.

14th.—Better. Pain subsided after the second dose of opium.

15th.—There is considerable thickening in every direction around the wire (lymph deposit), and slight oozing of pus from the wire holes.

19th.—Thickening is much increased; removed the wire; bowels relieved.

25th.—Thickening lessened; wire holes healed.

30th—Invaginated scrotum seems pretty secure; no protrusion on coughing whilst standing upright, and but slight impulse.

July 15th.—Occlusion of the inguinal canal is now very complete. On making traction upon the scrotum, the invaginated portion is firmly held in position by adhesions.

July 24th.—Discharged, but instructed to wear a light truss on resuming laborious work.

June 30th, 1869.—Invaginated scrotum remains intact. He follows a light occupation (messenger), and does not wear a truss, except when called upon to lift.

Case 2.—John B——, aged seventeen, a weakly, attenuated boy, was admitted into the hospital on the 19th of October, 1868.

History.—He has generally enjoyed pretty good health, although he was never capable of much hard work. Some time ago noticed a fulness in left groin; and about two months previous to admission, during a sharp attack of coughing, felt something give way there. This was soon afterwards followed by a swelling, which increased on lifting or otherwise exerting himself; and he became much troubled with pain and uneasiness in the belly. Had never worn a truss.

Present condition.—The abdominal walls are exceedingly thin, and there is a tendency to rupture an inch above the umbilicus, at the umbilicus, and in the right groin. In the left inguinal region is a hernial tumour, about the size of an egg, containing intestine. This can be easily returned. The obliquity of the canal is so considerably reduced that the inner half of the internal ring corresponds to the outer half of the external ring; and thus the hernia has become almost direct. This appears to arise rather from the yielding nature of the structures than from the application of any extraordinary amount of force. The ring margins are very thin and elastic, and the boundaries of the inguinal canal easily defined.

Treatment and progress.—The bowels having been previously relieved by an aperient, chloroform was administered on October 28th, and Mr. John Wood's operation performed as follows:—An incision about an inch in extent was carried through the skin of the scrotum over the fundus of the sac. The skin was next separated from the fascia, and the invagination of the latter carefully effected. A needle armed with strong silk was then passed through the invaginated fascia, conjoined tendon, and internal pillar of the ring; next through the fascia and external pillar; and, lastly, through the fascia, triangular aponeurosis, and internal pillar. Thus a loop and two ends were seen appearing externally at one aperture in the skin—the loop passing through the external, the ends through the internal pillar of the ring. The operation was completed by threading the lower end through the loop; and after drawing together the margin of the ring, so as to hug the cord, the ends were tied together over a coil of strapping; and, lastly, a pad and spica bandage were applied.

Oct. 29th.—Complains of pain in the course of the inguino-cutaneous nerves. Ordered twenty minims of tincture of opium.

Nov. 1st.—There is some thickening around the ligature, and slight oozing of pus along it; is now free from all pain.

3rd.—Thickening is increased; wound is nearly healed.

5th.—Wound is healed; ligature removed.

14th.—While standing erect, no preternatural impulse is felt on coughing. Ordered to wear a pad and bandage.

20th.—Cicatrix is firm, and all thickening is absorbed.

28th.—Discharged sound.

Dec. 20th.—Is now able to follow his employment without any support. Is, however, instructed to wear a light truss when lifting or doing heavy work.

On July 17th, 1869 (nine months after the operation), he attended at the hospital. There had been no return of the rupture; indeed Mr. Hill says the inguinal canal seemed to offer more resistance on coughing than the muscular walls generally. The patient wears an elastic abdominal support, and occasionally (i. e., before lifting weights) a light truss.

In these cases Mr. Hill carefully determined the following points previous to the operation: 1. The age, occupation, habits, and state of health of the patient. 2. The variety, condition, situation, and size of the hernial protrusion, with the course and dimensions of the canal. 3. Its cause, whether congenital, gradual, or sudden. 4. The amount of care which the patient could ensure after the operation. Both patients were young, healthy, and temperate, and they had a fair prospect before them as regards suitable employment for the future. In case 1 the simpler operation was selected because of the smaller size of the hernia, its recent date, and sudden cause; while in Case 2 the more complicated operation was chosen because of the larger size of the tumour, the dilatability of the inguinal canal, and the more direct course of the hernia.

GREAT NORTHERN HOSPITAL.

CASES OF ULCER; VARICOSITY; WITH VENOUS HÆMORRHAGE.

(Under the care of Mr. Gay.)

The successful management of such cases as those which are here described (from notes taken by Mr. Hopgood) is always a matter of importance, and often of great difficulty. The details will doubtless be read with interest.

Senile ulcer; varicosity; with venous hæmorrhage.—W. B——, aged seventy-two, thin and emaciated, was admitted in March, on account of a superficial stationary ulcer, about the size of a half-crown, on the inner aspect of the leg, two inches above the malleolus. The long dorsal vein of the foot ran beneath it; and for the distance of three inches above the edge of the sore this vein was varicose, nodulated, and very painful on pressure. The veins of the foot were congested and tortuous, some varicose. The sore had existed for eight years, and was surrounded by a broad halo of dusky but not hardened skin. He had suffered much pain in it, and also in the varicose segment of vein, on standing or walking; and latterly he had had repeated attacks of rather copious hæmorrhage. He had old bronchitis, and was in all respects a decrepid person.

Mr. Gay thought this a case of senile ulcer, which had corroded the coats of the vein on which it had trespassed. He placed four ligatures on the diseased vein above the sore, after emptying it of its blood by elevating the foot, so as to prevent the formation of clot within the vein as a consequence of its deligation. This was done to prevent future hæmorrhage, and not as a curative measure so far as the ulcer was concerned. The ligatures remained until the fourth day, when a smart attack of inflammation began, which ran along the cellular envelope of the vein from above the highest ligature to the middle of the thigh, at a point where the vein entered the saphena. The ligatures were removed; but abscesses followed, not on the site of the needles employed, but on the thigh—one just above the knee-joint, and another at the termination of the vein-branch. The cellular tissues sloughed for a considerable space at each spot, and left large sores, with overlapping edges, across which the vein, bared of its outer tunic, was observed to pass. A sharp attack of fever, accompanied with symptoms of broncho-pheumonia, a brown, furred, and dry tongue, hot skin, quick feeble pulse, nocturnal delirium, and sordes, attended the formation of these sores. The patient was treated with purgatives of calomel, rhubarb, jalap, and ginger; and fluid nourishment and moderate stimulus in the way of wine and brandy were given. At the end of a week the patient began to show signs of recovery from his previous apparently hopeless condition; the ulcers, both primary and secondary, healed; and at the end of five weeks he was discharged.

The man was a bad subject for operation. The irritation of the ligatures set up irritation in the coats of the vein at a distance from the part of the vein on which they were applied; and these were at points at which the vein is known to communicate with the deep veins. The narrow slits in the fascia through which these intercommunicating branches pass appear to have arrested the advance of the inflammatory action towards the subaponeurotic system of veins; but why at these particular points it should have increased in intensity it is difficult to say. Pyæmia (as it is called) followed, but there was no reason for believing that the pus around the vein had penetrated its coats, or in any other way obtained access within. *A considerable clot, however, formed in the vein along the inflamed tract,* and Mr. Gay is more inclined to believe that, at least in this case, the symptoms were due to the admixture with the circulating current of *impure liquor sanguinis, expressed and effete blood-globules,* and, perhaps, also, *portions of the clot* itself, than to direct pus-poisoning.

In order to prevent the occurrence of cellulo-phlebitis from deligation, Mr. Gay has, in more recent operations on the veins, removed the ligatures within twenty-four hours of their application; in one instance after twelve hours, and with perfect success, so far as the obliteration of the vein is concerned.

Mr. Gay, in reference to the practice adopted in this case, protests against the administration of *large quantities of sometimes pure brandy and other stimuli,* in persons suffering from pneumonic complications, with a typhoid condition of the system, after local injury. The *dry brown* or black tongue is sure to be retained by such excess of stimulus, and often of aliment too. Presently timely diarrhœa sets up to counteract the resultant mischief, and this, too, is treated by astringents, as though it were an aggravation of the disease rather than a relief to the over tasked system. Lives are too often jeopardised under these circumstances by the difficulties under which an enfeebled stomach and system generally are thus, with the best intentions placed.

Ulcer (venous), with varicosity.—M. T——, aged forty-eight, a healthy looking-person from the country, a cook. Has been accustomed to stand about from early life. She has an ulcer on the inner aspect of the leg, above the malleolus, surrounded by a broad patch of deep bluish and dense skin, the color being of a deeper shade around the margin of the ulcer than elsewhere. The long dorsal vein is severely varicose and nodulated from the edge of the ulcer to within a few inches of the knee-joint; there is also a varicose vein which passes from it to the external saphena below its fascial foramen. The veins at the inner edge of the foot are numerous, large, and convoluted. She attributes the varicosity, as well as the ulcer, to standing—an act which has for years been very painful to her, as well as attended with cramps in the calf and back part of the thigh; these have now become so severe that she is obliged to give up her situation. The skin around the ulcer is very hard and tense; the ulcer unhealthy and stationary, and the varicose portion of vein hopelessly diseased. The veins had been varicose for more than thirty years. The ulcer had existed for sixteen months; but the induration of the skin had, it is probable, anticipated it by many years.

Mr. Gay made a curved incision on each side, and about half an inch from the edge, of the ulcer, through the fascia and varicose vein, having previously placed three ligatures on the vein, in the manner described in the account of the former case. The needles were taken out the following day, and the vein gently compressed by a pledget of lint and bandage. The wounds gaped, but healed in the course of three weeks. The ulcer began to heal at the same time, and is now nearly closed; whilst the vein is obliterated, and that without the occurrence of any inflammatory action on the sites occupied by the needles.

It has been objected to the incisions around ulcers that, being made in diseased tissues, they do not always heal. Mr. Gay has made these incisions repeatedly into every kind of tissue that can be met with around ulcers—and so have other surgeons, especially Mr. Henry Smith, of King's college,—and on no occasion has he met with a case, neither has such a case been reported to him (*he has seen the remark merely in books*), in which they have refused to heal, and that most readily. The ulcers sometimes heal before the wounds; but not in every case. And should an ulcer make its appearance again on a limb, in which one has been treated by the method in question, it very rarely occupies the situation of the cicatrix.

◆

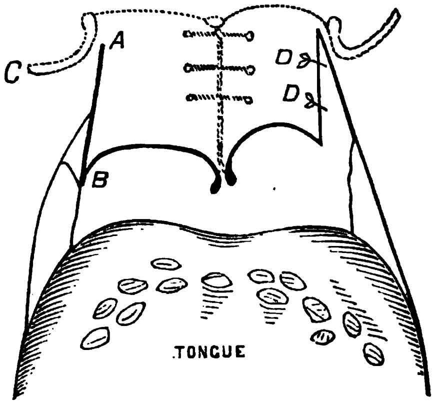
WESTMINSTER HOSPITAL.

CASE OF CLEFT PALATE; NOVEL PROCEDURE FOR IMPROVING THE VOICE AFTER THE OPERATION OF STAPHYLORAPHY.

(Under the care of Mr. Francis Mason.)

Every surgeon who has had any experience of congenital cleft palate will, we believe, admit that the principal object for which the operation is usually undertaken—that is, the improvement of the voice,—is seldom attained. In the most favorable cases, however accurately the edges of the cleft may be adjusted, and however well satisfied the operator may be with the result of his manipulative skill, the patients and their friends invariably express some, and often a great deal of, disappointment that the tone of the voice remains much as it was. A little consideration will suffice to show why the expected improvement does not take place. It should be remembered, that the condition of congenital cleft palate is not that of a mere slit or rent, but is an absolute want of substance in the part; and, in order to make good this deficiency, a "gusset," as it is termed, is required. Now, to make a gusset of living material seems difficult, if not impracticable; hence surgeons are contented simply to bring the edges of the cleft together, union being almost infallible if the muscles be divided in accordance with the plan recommended by Sir Wm. Fergusson. The result of the operation is that the two sides are necessarily put considerably on the stretch, and the soft palate, instead of being freely movable and capable of being brought by muscular action upwards and backwards against the posterior wall of the pharynx, remains as a tight curtain, so placed as to allow air to pass into the posterior nares, causing that peculiar nasal twang more or less constantly noticed in this condition. It therefore stands to reason that the voice cannot be materially altered or improved under such circumstances.

Mr. Francis Mason has devised, and has recently carried out at the Westminster Hospital, a novel and ingenious proceeding, having for its special object the improvement of the voice. Mr. Mason deals essentially with the soft palate, and assumes that the cleft has been already closed by a previous operation, and that sufficient time has elapsed so that the circulation between the two sides has become thoroughly established. He has reason to think that by freely dividing the soft palate on both sides, in the manner about to be described, partial, if not complete restoration of the normal voice may be effected. The object he has in view is so to release the soft palate that it may be brought more closely in apposition with the back part of the pharynx, and thus, to a certain extent if not wholly, do away with the disagreeable nasal twang already alluded to. The subjoined diagrammatic woodcut, representing the isthmus of the fauces, seen from the front, will serve to illustrate the steps of his operation. The dotted lines indicate the edge of the hard palate and the hamular process on each side, The cicatrices of the sutures in the middle line of the soft palate, the result of the previous operation, are also shown.



The patient is placed in the recumbent posture, and may or may not take chloroform. The soft palate is completely transfixed with a sharp-pointed knife at A, at the inner edge of the hamular process (C), the outline of which may, in most cases, be distinctly seen in the living subject. The incision is carried downwards from A to B, dividing the whole of the soft palate. A similar incision is made on the opposite side, and the operation is completed by introducing, with a needle in a handle, one or more sutures from before backwards at D, hemming (so to speak) the anterior and posterior mucous edges, thus preventing the newly-made raw surfaces from uniting by granulation. In this proceeding the palato-glossus, palato-pharyngeus, and the tensor palati muscles are purposely divided. The levator palati is not interfered with, or at most only a few of its fibres are cut.

The case upon which Mr. Mason operated is that of the boy, now aged six, whose palate he closed without chloroform in October last. The result is so far satisfactory that there is a decided improvement in the boy's voice. As this is the first patient upon whom this operation has been performed, it would be premature to form a strong opinion as to the probable results; meanwhile the operation seems to commend itself as being extremely simple, free from danger to important vessels, and not particularly painful—a lump of ice in the mouth for a minute or so would render it almost painless. Moreover, chloroform may be administered (as in this case), vomiting, if it occur, being no disadvantage. There is an ample supply of blood to this part, so that sloughing need not be apprehended; and further, it is a proceeding that may be undertaken at any period of life, and repeated as often as necessary, in case the cut surfaces should unite by granulation. Mr. Mason contends that it can do no harm; and if, on the other hand, it be attended with even partial success, it supersedes any mechanical appliance, and confers an inestimable boon on patients whose condition is distressing both to themselves and to those with whom they associate.

ST. GEORGE'S HOSPITAL.

A CASE OF ENTERIC FEVER, WITH BLOOD PASSED FROM THE KIDNEY. A CASE OF COMA OF OBSCURE ORIGIN.

(Under the care of Dr. OGLE.)

THERE has been a good deal of enteric fever of late in the metropolitan hospitals, and various phases of the disease have presented themselves. We recorded one peculiar form last week in a case of Dr. Duffin's at King's College Hospital. The following is a brief record of one which also deserves notice from its rarity.

Enteric fever; blood passed from the kidney.—Agnes B——, a servant, aged eighteen, was admitted with fever, and at the same time with symptoms of an hysterical character, much general restlessness, turning herself about, and great pain in middle of the back on the left side. After a very delirous night, the urine was found to be very dark, thick, and opaque, owing to the presence of a large quantity of broken-down fibrinous material, mixed with cells of epithelium and a few granular casts of uriniferous tubes, highly albuminous, and containing but comparatively few entire blood-globules. Under the use of salines, wine, and nourishment, with morphia at bed-time occasionally, the patient entirely recovered; the deposits in the urine gradually clearing off, and the hysterical and excited manner subsiding. She left the hospital quite well, the urine being clear and in all respects healthy.

The following is a case of obscure cerebral disorder:—

Comatose state; cause obscure; peculiar slowness of pulse.—Robert B——, aged twenty-three, had been subject to severe headaches and pains in the face. One day he was found by a fellow-servant in a fainting fit, and on the following day was brought into hospital in a condition like that of sleep in many respects. He was unconscious of circumstances around him; but could be roused so as partly to put out his tongue, and was evidently annoyed when disturbed. The pupils were very contracted, but equal, and acting somewhat to light. There was no rigidity or apparent paralysis of the muscles. The pulse was remarkable, as being only 44 per minute, and quite regular. He could swallow well, and took food; but otherwise remained for several days in the same state. About four days after admission, he answered questions sometimes aright, but not always; his speech was indistinct, and the pulse was 60. The urine was free from albumen; and no disease of any of the organs of the body was ascertained. A week after admission he said he had much pain in the head. Later on, it was noticed he used wrong words in speaking. He gradually recovered so as to attend to all his wants, and to be much more sensible, the pulse being 64 per minute. At no time was any convulsive movement noticed. The treatment consisted of free purging, nourishing diet, turpentine enemata, and subsequently a blister to the nape of the neck, which was dressed with mercurial ointment. About two weeks after admission he was removed into the country by friends. It was ascertained by letter a fortnight after this that he had greatly improved, and was out walking, and thinking of returning to work.

Dr. Ogle has lately had under his care two cases of general muscular atrophy, both apparently greatly benefited by arsenic. Of these, however, one died with bronchitis, evidently from muscular inability to relieve the lungs of the excessive secretion. In some cases of chorea the Calabar bean has been employed with success; and the nitrite of potash has been used apparently with benefit in some cases of acute rheumatism. Dr. Ogle tells us that of late there has been an unusual number of cases of the slighter forms of rheumatism complicated with gonorrhœa.

Under his care now is an interesting case of empyema, with the heart pushed over, and fixed at a point corresponding, to the right nipple. Paracentesis by trocar was resorted to, and much pus evacuated. The wound healed, but since then has spontaneously opened, and much pus now drains off, the heart remaining displaced as before.

KING'S COLLEGE HOSPITAL.

CALCULUS VESICÆ: CASE WHERE DEATH FOLLOWED THE INTRODUCTION OF THE LITHOTRITE.

(Under the care of Mr. HENRY SMITH.)

THE patient's case is interesting and instructive, as it shows what serious results may ensue from the introduction of an instrument into the bladder of an apparently healthy person, especially should there exist any disease either of the organ itself or of the kidney. Instances have occasionally been met with in the hands of various surgeons where death has rapidly followed even the mere introduction of a catheter or sound, and it is probable that in most of these instances some disease of the kidneys, which was not ascertained during life, existed to render the operation so dangerous. In the case we are about to relate, the man was of such a remarkably healthy appearance, of small and wiry frame, that there was not even a suspicion of any organic disease about him, and no case would appear to have been more favorable for an operation. Mr. Smith also used the utmost gentleness in introducing the lithotrite for the purpose of ascertaining the size of the stone, and had not the slightest difficulty in laying hold of it, and the fatal result of this manœuvre was a matter of astonishment to all those who witnessed the introduction of the lithotrite.

H. D——, aged sixty, a spare, wiry-looking, healthy countryman, was admitted into the hospital on January 18th, with symptoms of stone. With the exception of these symptoms, the man seemed to be in remarkably good health.

On the 20th, Mr. Henry Smith introduced a moderate-sized lithotrite very gently into the bladder, and, opening the blades, immediately seized a stone, which he measured, and found to be about three-quarters of an inch in diameter, and apparently very hard. This proceeding only lasted a few moments, and produced scarcely any pain. Mr. Smith determined to crush the stone in a few days.

On visiting the patient on the 22nd, Mr. Smith was surprised to find him suffering most severely from vesical irritation, the symptoms being continual desire to pass urine, which was effected with severe pain, and only in small quantities. Warm baths and opiates (both by the mouth and rectum) were exhibited, but gave scarcely any relief. The general system soon became affected, and a low typhoid condition was established; and the patient continued in this state of extreme suffering until the thirteenth day after the use of the lithotrite, when he died.

On post-mortem examination the following appearances presented:—A stone composed of oxalate of lime, and slightly covered by phosphates, was found lying on the base and left side of the bladder. It was nearly as big as a blackbird's egg. At the point where it lay there were three ulcerated patches, the mucous membrane being destroyed. The structure of the bladder itself was much thickened, and on cutting through its walls there were seen two or three cavities containing purulent matter, and these cavities were lined by a distinct and well-formed membrane. The prostate was much enlarged. The right kidney was much enlarged, and its surface was studded over with minute whitish deposits. The cortical structure was much congested, and the calyces of the kidney contained some muco-purulent secretion. Left kidney healthy.

In some remarks which this case gave rise to, Mr. Smith stated that it was fortunately one of extreme rarity. He had never witnessed any bad results from the passage of a lithotrite, although, of course, like others, he had on more than one occasion witnessed the most violent symptoms, and even death, after a single act of crushing a stone. He must confess that he was sorely puzzled, when the violent symptoms came on, to know how to account for them, and he was in doubt whether he should not introduce the lithotrite, and break up the stone at once—a measure which is known to be every effectual in removing similar symptoms after a stone has been once broken probably into large fragments; but he thought the proposal too hazardous. Then the question naturally occurred to him as to whether he should not perform lithotomy, and thus remove what might be the offending cause. He considered this point very seriously, and conferred with his colleagues about it; but it was not deemed advisable in the condition the patient was in to resort to this step. The appearances after death justified the wisdom of non-interference; for it was clear that disease of the bladder, at least, had been going on for some time, and there is no doubt that the simple introduction of the lithotrite and measuring the stone had in that state of things excited fresh mischief. The most extraordinary feature in the case was the entire absence of any symptom of concomitant disease of the bladder when the patient first applied.

◆

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

A CASE WHICH ILLUSTRATES SOME OCCASIONAL SEQUELÆ OF CEREBRO-SPINAL CONCUSSION.

(Under the care of Dr. BUZZARD.)

THERE is a man attending at this hospital just now, whose case has a certain interest from a medico-legal point of view, as well as from its pathological bearings.

A stoker, forty-five years of age, was employed one day ten months ago in hauling up some heavy object with a rope. The rope broke, and the man fell his length upon the wooden platform on which he had been standing, coming down upon his back with such violence as to break some ribs. He also struck the back of his head, and was insensible for a few minutes. He kept his bed for eight weeks. His previous health had been perfectly good. He describes the following as the symptoms by which he has since been affected. He has a "darting," "throbbing," or "gathering," which proceeds from the hollow of his back into the back of the head. This is constant, but not so bad, he thinks, as it was. Going into the air makes him feel better, but he suffers special inconvenience during changes of weather. His power of hearing on the right side is gradually becoming impaired. For a long while after the fall, he says, he found difficulty and delay in passing his urine. On first getting up he was very helpless with his legs, not being able to stand; there was much tingling in them, which has since disappeared, and he is gaining power in his legs, so that he can walk a mile now; but he has been able to do no work. He had little or no sleep until a month ago, and up to that time as he lay in bed he used to have constant twitching, his wife says, "like a child in convulsions." He describes himself as being exceedingly "nervous;" any sudden start makes him giddy, so that at times he has to hold on for support. He is greatly depressed in spirits, and his memory is impaired. His pulse is large, soft, and quick. His walk is feeble, and it is said that he has lost much flesh. Tongue brown and furred. Over the fourth cervical spine there is tenderness to the touch. No retinal changes observed with the ophthalmoscope.

Dr. Buzzard remarked that the train of symptoms detailed by this man was just that which the medical examiner in a case of alleged injury from a railway collision frequently hears from the sufferer and his friends. It was improbable that there was any exaggeration in the present case, as the temptation which is often held out by an action at law against a company was here wanting. He pointed out, however, that, with very slight exception, the man's symptoms were subjective. They had to depend upon his account, as there was little to see. But these exceptions, though slight, were very well worth noting: the look of illness; the brown furred tongue; the feeble gait; and, lastly, the quick, weak pulse. Dr. Buzzard called attention to the fact that there had been no interval of immunity in this case, such as was sometimes described in cases of railway accident. The symptoms of nervous exhaustion had been constant since the accident, and the man was gradually but slowly improving. He remarked that he had met with a good many cases in which either paralysis agitans, progressive muscular atrophy, general spinal paralysis, or locomotor ataxy had followed shock to the cerebro-spinal nervous system; but it was not, according to his experience, very common to meet with the peculiar combination of physical and moral symptoms such as this man described in cases of ordinary violence—not due, that is, to railway accidents.

◆

ST. MARY'S HOSPITAL.

HÆMATO-HYDROCELE TREATED BY A SETON.

(Under the care of Mr. NORTON.)

HAD the patient whose case is here narrated not left his bed too early, it is not likely that the formation of pus would have taken place; whilst at the same time it is most probable, judging from the symptoms described, that sufficient inflammation had been established to promote adhesion of the layers of the tunica vaginalis, and so to prevent a recurrence of the disease.

H. K—— had an enlargement of the right testicle, which had commenced ten months previously and had continued to enlarge gradually since that time. On examination, the scrotum was found to be somewhat ecchymosed, and the veins were enlarged. The tumour was pyriform in shape, extending up into the external abdominal ring, where the spermatic cord could be felt thickened and indurated. The tumour fluctuated, and on percussion vibrated. On applying a lighted candle, no light could be perceived through the tumour. The patient stated that the bruised appearance of the scrotum had only existed for a fortnight, and that about the same time it became weighty and very painful. He could not account for the alteration, either by a blow or by any other injury. The patient was admitted into the hospital, and on the following Wednesday Mr. Norton punctured the tumour, and drew off eight ounces of fluid, of a specific gravity 1035, containing much blood. All pain was removed by the operation; but on the fourth day the tumour had regained its original size, and the pain returned. On the following Wednesday about the same quantity of a similar fluid was removed. The trocar and canula were then made to perforate the skin of the scrotum in a second place, and a single thread of oiled silk was now passed and tied loosely. The seton thus formed was removed in thirty-one hours, when it was found that the tumour was again very hard and painful, and now contained, probably, about five ounces of fluid. An antimonial mixture was administered internally, and a lotion of acetate of lead and laudanum was applied to the testicle. On the fifth day the enlargement had considerably diminished, the aching had passed off, and the skin, instead of being tense as hitherto, was now corrugated.

The patient, feeling in good health and free from inconvenience, left his bed without permission, but, soon finding a recurrence of the pain, returned to bed.

The following day inflammation had set in; the skin became red and puffy, and the part hot and painful. Linseed poultices were now applied, and in two days after, as suppuration had evidently taken place, an incision was made into the lower part of the scrotum. Several ounces of pus were evacuated, but very extensive induration and enlargement still remained. Poultices were applied so long as the induration and discharge continued.

The patient was discharged cured in three weeks from the date on which the seton was passed.

◆

CHARING-CROSS HOSPITAL.

CASE OF EPILEPSY SUCCESSFULLY TREATED WITH ASSAFŒTIDA.

(Under the care of Dr. POLLOCK.)

THE following case is interesting not less as an example of failure of the bromide of potassium to influence the recurrence of fits described as epileptic in character, than from the successful results attending the use of assafœtida.

C. Y——, an unmarried woman, twenty-nine years of age, applied at the hospital in November, 1868, suffering from epileptic fits. She said she had been liable to them since she was nineteen years of age, and that they had been gradually increasing in severity and frequency, usually attaking her once or twice in a fortnight. She loses all consciousness, falls down, struggles violently, bites her tongue and lips, exhibiting, in fact, all the usual phenomena of an epileptic fit, ending with a deep sleep, from which she wakes much exhausted. The attacks come on quite unexpectedly. She has a sallow complexion, and the distressed and anxious look so common in epileptics. Her general health is pretty good, and she menstruates regularly. The case was first treated with bromide of potassium, gradually increasing the dose from fifteen to forty grains three times a day, but without the slightest benefit. Sulphate of zinc, quinine, and tincture of iron were all tried in full doses, but no good result followed. In April last half a drachm of tincture of assafœtida with three grains of carbonate of ammonia was given three times a day, and with a most satisfactory effect. Since the first week that the remedy was tried she has had no return of the fits, though she suffers at times from headache and a feeling as if a fit were coming on. She has her medicine renewed occasionally, and is still under observation.

Dr. Pollock remarks, that if the fits had not been so clearly epileptic (she had one on one occasion while being seen at the hospital), it might be supposed that the case was one of hysteria; but there can be no doubt as to the nature of the disorder, though it is accompanied by some symptoms of a nervous character, which first led to the employment of the assafœtida.

The hint afforded by this case has been taken advantage of, and other cases of epilepsy have been treated with the same drug, but at present without any decided results. It may be worth while, Dr. Pollock suggests, to adopt this mode of treatment in cases where other medicines have been given without affording any relief.

MISCELLANEOUS CASES.

UNIVERSITY COLLEGE HOSPITAL.

Herniotomy.—We saw Mr. Erichsen operate last August for strangulated femoral hernia on an old woman whose case seems to have been misunderstood previous to her admission. The hernia had been strangulated for five or six days, during which time she was treated with fomentations &c., as for colic; and it was not until the poor creature vomited stercoraceous matter that she was sent in. The sac contained both intestine and omentum; the first of which went back easily on the stricture being divided, the latter less readily. The sac was not opened. The operation was her only chance; but she was sinking at the time, and died eight hours afterwards.

The following are amongst Sir Wm. Jenner's patients. Mr. Minter, senior physician's assistant, was obliging enough to give us information respecting them.

Aphasia, with cardiac murmur.—A printer's writer, aged thirty-five, has been aphasic for four years. In answer to our question as to his occupation, he said: "I write for the—for the—yes—for the—;" and this was all he could express of the nature of his work. There is a slight loss of power in the right side. So far as we could learn, the attack was gradual in its onset—a point which would rather militate against the case being one of embolism, which in other respects seems probable; for the patient has a dilated heart, with a systolic murmur.

Vomiting of three years' duration.—A young woman, aged nineteen, of hysterical aspect, with a tendency to exophthalmic goitre,—thyroid enlarged, her eyes somewhat prominent, and she has palpitations of the heart. For three years she has vomited after all food, but has continued notwithstanding to avoid growing very thin. After solid food she has great pain in the left side and under each scapula, but liquids do not cause this. She has not menstruated for three years, and has done no work for a similar period. Are her symptoms referable to gastric ulcer, or to hysteria, or to both?

Cough, with elevation of temperature.—A woman, aged twenty-six, has been kept in the hospital since last October. She has cough, and spits up greenish mucus. Auscultation gives no evidence of lung disease, but her temperature continues high, averaging 100°, and she loses flesh, so that her case gives rise to suspicion of tuberculosis. She suffers much from constipation, but the digestion is not bad.

ST. MARY'S HOSPITAL.

Left hemiplegia, with complete paralysis of the tongue.—This is the case in a woman, aged fifty-five, but looking much older, with a frown on her forehead, and lachrymose expression about the mouth, who is under Dr. Sieveking's care. She answers all questions unintelligibly; but this is apparently from muscular difficulty about the tongue rather than from the peculiar disturbance to which the term aphasia is usually applied. She makes signs with her hands. She is very emotional, easily laughing or crying. On opening her mouth, the tongue is seen lying clubbed and dry on the floor of the mouth, and cannot be protruded. Power of grasp in left hand diminished. Seven years ago, on waking, found she had lost the power of speech, which she regained in two months, so that she could speak naturally. But about nine months ago she was attacked again in the same way, and this time she partially lost the power of left arm and leg. On July 3rd, having very much improved, she was attacked in a similar manner for the third time. On admission, July 9th, she had entirely lost the power of speech. There is inability to retain the saliva. Cannot swallow solid food; but we saw her drink water without much difficulty. She has been gradually improving since her admission. Now no lameness; some loss of power in left hand; face, on laughing, drawn to right. She is very low-spirited. The case in some respects resembles one of those described by Trousseau, under the title of "Glosso-laryngeal Paralysis;" but it differs from these in respect of the repetition of the attacks, followed by improvement and almost complete restoration, in place of the sure and gradual deterioration which is ordinarily seen in such cases, and which is commonly accompanied by general progressive muscular atrophy —a symptom apparently not present in this example.

Delirium tremens.—Dr. Sieveking tells us that he has employed powdered capsicum, in doses of twenty or thirty grains twice a day, with very good results, in these cases.

◆

Provincial Hospital Reports.

ROYAL SURREY COUNTY HOSPITAL.

A CASE OF DIABETES MELLITUS TREATED BY OPIUM WITH BENEFIT.

(Under the care of Dr. STEDMAN.)

MR. THOS. F. HOPGOOD, house-surgeon, has been kind enough to send us the following interesting case:—

Wm. W——, aged twenty-three, was admitted Nov. 19th, 1868, suffering from the above disease. His general appearance was thin, his walk unsteady. He complained of great thirst, of passing a large amount of urine, and of having lost considerably in weight. Upon examining his urine, it was found to contain a large amount of sugar; no albumen; specific gravity 1036. Chest healthy; weight 8 st. 8 lb. Drink taken in 24 hours, 13½ pints; urine passed, 16 pints. To take tincture of opium, five minims, three times a day. Diet: two eggs, two ounces of brandy, two pints of milk, ten ounces of meat; bread made of bran,* sufficient to make a loaf, two eggs, milk, and gum arabic. Under this treatment his symptoms gradually became better, the quantities of drink and urine being—

---

* The bran was soaked sometime in milk, the milk being renewed once or twice.

		Drink.		Urine.
Nov. 21	...	13½ pints.	...	16 pints.
" 22	...	12½ "	...	17 "
" 23	...	10 "	...	13 "
" 24	...	14 "	...	17 "
" 25	...	12 "	...	17 "
" 26	...	7 "	...	7 "
" 27	...	7½ "	...	6 "
" 28	...	6 "	...	6 "

The average quantity per day for each fortnight was as follows:—

	Drink.	Urine.
From Nov. 29th to Dec. 12th	7 5–14 p.	6 10–14 p.
" Dec. 11th to Dec. 27th	6 8–14 "	5 10–14 "

On Christmas day he had a small piece of plum pudding, and next day the drink ran up from 6 to 10 pints; the urine from 6½ to 11 pints.

On the 27th of December he left off the opium mixture, and had one composed of dilute nitro-muriatic acid and infusion of gentian. His weight was 8 st. 13 lb. Specific gravity of urine 1030, and quantity passed 5½ pints. The fluid taken was 6¾ pints. The average quantity for the fortnight per day was:

	Drink.	Urine.
From Dec. 27th to Jan. 10th	6 12–14 p.	6 8–14 p.
" Jan. 11th to Jan. 24th	7 10–14 "	7 2–14 "

His weight was 8 st. 9 lb.

On the 11th of January he commenced taking the opium again in the shape of opium pill, a grain and a half three times a day, and has had it increased up to eight pills a day. The average for the next fortnight per day was:

	Drink.	Urine.
From Jan. 28th to Feb. 10th	7 6–14 p.	7 2–14 p.

And the last week he was in the hospital it averaged per day:

Drink.		Urine.
6 pints.	... ...	5 4–7 pints.

The specific gravity was 1030, and there was only a slight trace of saccharine matter. The diet was the same throughout, with the exception that during the latter part he was taking the bran biscuits (diabetic) instead of the bran bread.

After he left the hospital he continued for some time as an out-patient; and his opium was by degrees lowered until he was only taking three pills a day, without any change in his symptoms for the worse, and he was able to take a situation as schoolmaster.

◆

LEEDS INFIRMARY.

TREATMENT OF DIABETES BY PEROXIDE OF HYDROGEN.

(Under the care of Dr. CLIFFORD ALLBUTT.)

THE great hopes which were entertained of the action of this remedy seem to be fading away. Dr. Allbutt has given the solution of peroxide of hydrogen and the so-called ozonic ether a long and careful trial in four cases of diabetes; but the want of success in each case has deterred him from submitting any more diabetic patients to the same useless procedure.

The four cases were chosen as representing four degrees of severity of the disease. The patient who was taken as an example of the extreme stage, was treated with increasing doses of peroxide of hydrogen for six weeks. No good effects were noticed, and the patient died a short time after the discontinuance of the medicine.

Two of the cases were in private practice, and two were in the infirmary. The therapeutic experiment was carried out in the infirmary with great care. The two patients were taken in at the same time, and their weights, quantities of urine, amounts of water drunk, and specific gravities of urine were taken daily. For about ten days they were placed on an ordinary diet (some restriction in the quantity of potatoes and bread only being made), and the daily variations noted. The peroxide of hydrogen, the purity of which was guaranteed, was then given in increasing doses, until the two patients were taking half an ounce of the liquor every six hours. In one, the slight daily decrease of weight was arrested for a day or two; but this was apparently accidental, as it soon recommenced. It was intended to publish the columns containing the daily weight, water drunk, urine passed, and specific gravity; but as no important variations were seen in them on administration or withdrawal of the medicine, it seemed unnecessary. Both patients improved subsequently on carbonate of ammonia and restricted diet, though one of them, as stated above, ultimately died. The peroxide of hydrogen was given for about two months in each case.

◆

Clinical Records

OF

THE PARIS HOSPITALS.

As we have, unhappily, not yet adopted the decimal system of weights and measures in England, it may be convenient to some of our readers if we append a brief memorandum of the relations which the French gramme and mètre bear to our standards, avoiding as much as possible nice fractions:—

A gramme is about 15½ grains troy.
A mètre ,, 3¼ feet.

Multiples of these bases are expressed by Greek, fractions or divisions of them by Latin prefixes—thus:

A decagramme = 10 grammes.
A hectogramme = 100 grammes.
A decigramme = 1–10 gramme.
A centigramme = 1–100 gramme.
A milligramme = 1–1000 gramme.
A décamètre = 10 mètres.
A décimètre = 1–10 mètre = nearly 4 inches.
A centimètre = 1–100 mètre = nearly 4–10 inch.
A millimètre = 1–1000 mètre = nearly 4–100 inch.

PHYSIOLOGICAL AND THERAPEUTICAL EFFECTS OF THE CALABAR BEAN, EMPLOYED IN HYPODERMIC INJECTIONS.

The following note is by M. Bourneville, house-surgeon to the Paris hospitals:—

During the last few years the Calabar bean has been studied with care and employed in several diseases. I have personally instituted some experiments in order to verify certain phenomena and divers therapeutical essays. Among the results which I have obtained I may just mention the following. Everyone knows that the Calabar bean, when instilled into the eye, produces a very remarkable contraction of the pupil. Now I have been surprised to observe that, when it is injected under the skin, there ensues, on the contrary, a dilatation of the pupil, or else the ocular diaphragm remains unchanged. In nine cats and one dog the dilatation was well marked and constant. Furthermore, in two cats I observed an unequal dilatation of the pupils. In four frogs the pupils remained unchanged, or seemed slightly dilated. It is not only in animals that this peculiarity, already noticed by Fraser, is to be observed, but also in the human species.

A second point which seems interesting to notice is the antagonism between the Calabar bean and atropine. I have verified this phenomenon in six guinea-pigs. After having injected the bean, atropine was injected. The animal did not succumb when both medicaments were injected in fit proportion; but two or three days afterwards, a dose of the bean equal to that which had been at first employed being injected into the surviving animals, they all died. This obviously shows the antagonistic action of atropine against the Calabar bean.

From a therapeutical point of view, I have prescribed the Calabar bean, taken through the mouth, to epileptic patients in 1866, and by the hypodermic method to (1) a woman of sixty-five years, having paraplegia with spasmodic contraction; and (2) to a young girl of eighteen, affected with chorea. In the first case, in which the paraplegia was most probably due to a tumour seated in the spine, and was attended by marked contraction on the left side, I injected, from Dec. 4th to 30th, 1868, from four to thirty milligrammes of the extract of Calabar bean. Notwithstanding the gradually increasing strength of dose, there did not result the slightest amendment. Moreover, the pupils never showed any contraction, but remained after the injections as they were before.

With regard to the choreic patient, who was then in her third attack, I injected every other day during three months (from February to April, 1869) from six to eight milligrammes of the extract of Calabar bean. The symptoms gradually abated without disappearing entirely. Contrary to what has been noticed by Ogle and others, there was no speedy cure in this case. Again, in this case as well as in the former, and in my experiments on animals, either the pupils remained unchanged, or became slightly dilated. If the dose was not increased, it was because the weak dose which I employed had already produced some bad symptoms; restlessness, palor of the countenance, clammy sweats, lipothymy, slow and small pulse, and occasionally, bilious vomiting. These facts, besides confirming certain views which have been since then advanced, show that the administration of the Calabar bean by the hypodermic method is possible even now, as has been shown, moreover, by Eben. Watson. The doses above mentioned may, therefore, serve as a guide.

HOPITAL LARIBOISIERE.

THROMBUS OF THE VULVA AFTER DELIVERY; CONSIDERABLE LOSS OF BLOOD; SPEEDY RECOVERY OF THE PATIENT.

(Under the care of Dr. Millard.)

We are indebted to Mr. Edward Alling, house-surgeon to the above hospital, for the notes of this case.

The subject of this observation, a primipara, aged twenty-one, was brought to bed on March 24th. The first pains manifested themselves on the 23rd, at 5 P.M.; and the patient was delivered at 1 A.M. the following morning. There was no tumefaction, and no varicosity of the vulva. The accouchement had taken place easily. About a quarter of an hour after the delivery, the patient felt excessive pain in the vulva and pelvis, accompanied by contractions which made her feel as if she was about to be brought to bed a second time. The vulva then became tumefied, which the patient first recognised by the impossibility of closing her thighs.

March 24th.—On examination, the large and small left labia are observed to be enormously swollen. There is no change in the color of the skin; but near the mucous surface there exists a violet, sanguineous hue. The tumefaction extends behind to the buttock, near the margin of the anus. A livid hue marks the situation. General condition good.

25th.—The sanguineous infiltration has passed round the perineum, and involved the right labia. The whole constitutes a very large tumour. Each labium is as large as a turkey hen's egg. The lochia seem to flow easily.

26th.—The mutual pressure of the labia has produced a small eschar, which seems superficial; but as the tumefaction has not increased, no proceeding is employed, in the hope that the tumour will diminish of itself.

27th.—The tumefaction appears to have diminished.

28th.—There is a marked diminution of the swelling. The general health is excellent; no fever; appetite good.

29th.—The patient has had a rigor during the day. Mr. Alling, the house-surgeon, discovered in the evening a small opening which had been effected by the fall of a portion of the eschar, and which led into the central situation of the tumour. A few days before, exploration with the finger had failed to detect any penetration of blood into the pelvis. The same evening Mr. Alling made an incision five centimetres in length into the cutaneous surface of the greater labium, and managed to draw out thereby an enormous quantity of blackish clots. Through the opening the finger penetrated into a vast cavity, the internal wall of which was extensively perforated towards the vagina, whilst its external wall was formed by the ischiatic ramus. The finger could reach the pelvis along the vagina somewhat behind the ischiatic ramus over the whole breadth of the finger. Chlorinated injections to be employed.

30th.—After the employment of injections a large quantity of clots, amounting to between two and three hundred grammes, again issued from the opening. The day before the quantity had amounted to about six hundred grammes. There has been no recurrence of rigor.

31st.—Nothing new. General condition remains good.

April 1st.—Patient preserves her appetite, and has no fever. It is difficult to know what is going on in the vast cavern formed by the thrombus. There was scarcely any smell, except after the employment of the chlorinated injections, three of which were administered daily.

2nd.—The tumefaction is diminishing rapidly.

3rd.—During the last two days abundant suppuration has taken place in the cavity. On introducing the little finger into the opening, a deep, irregular, smooth cavity is felt. The whole of the little finger may be introduced. There is slight pressure in a lateral direction, but none in the vertical.

7th.—Patient is doing well. There is now scarcely any suppuration going on. The injections, which have been constantly continued, are now reduced to two per diem.

10th.—The canula can no longer penetrate through the opening; injection will therefore be administered henceforth through the vagina. On introducing a finger through the outer or cutaneous opening, and another through the deeper orifice in the vagina, both easily meet; but the cavity is closing more and more.

13th.—Patient has been walking about during the last few days. She has grown fat, and looks well.

18th.—The external wound now presents a very narrow passage, through which a probe may be introduced a distance of about five centimetres before reaching the vaginal orifice. Into this latter opening the finger can no longer penetrate. On separating the labia a slight quantity of fluor albus is seen to issue from the vagina.

22nd.—Patient leaves hospital in an excellent condition. She is almost completely cured, and looks remarkably well.

Editorial.

"MEDICINE, DISEASE, AND DEATH."

The subjects of Dr. Elam's papers, "Medicine, Disease, and Death," are too interesting for the papers not to have been extensively read. The conclusions to which Dr. Elam comes are too serious to be accepted without reluctance, and, unless we are greatly mistaken, are very erroneous. It would be discouraging indeed if, with the enormous increase of our knowledge of late years, our art had really retrogressed. However, the question is not whether Dr. Elam's conclusions are flattering and satisfactory to the profession, but whether they are right—whether we are really doing less for the mitigation of suffering and the postponement of death than our forefathers did. It is very easy to put together three great vague words, such as give the attractive title to Dr. Elam's papers, and, with the help of statistics, come to almost any conclusion on the subject to which the mood or fancy of the writer may incline him. But it is very doubtful if sound conclusions are to be easily reached in this way. Without determining here the value of the statistical method of judging of medicine as an art, we may say that the data are not yet in existence upon which such a judgment can properly be based. The art of diagnosis is still too imperfect, and the returns of the Registrar-General are still composed of too vague material, to allow us to think that in comparing the same names we are comparing cases really the same, and having the same significance. The late Dr. Alison, of Edinburgh, was wont to make a remark which we commend to Dr. Elam, to the effect that one carefully observed fact or case in medicine was worth more for practical purposes than a great mass of figures.

Before criticising more particularly Dr. Elam's conclusions, let us be clear as to the nature of them. He thinks—1st, that the average death-rate is slowly but constantly increasing; 2nd, that men die now at an earlier average age than they did thirty years back; 3rd, that even those diseases which are the best understood are increasing progressively in annual mortality, unchecked by any resources of art. Dr. Elam thinks that either disease has increased, of which, he says, we have no evidence, or the power of medicine in arresting it has diminished, because the principal sources of mortality show an increased average of fatality.

Now, we are not going to revert to the statistical view of Dr. Elam's papers. We thought it right to examine the statistics of the subject, and we think we have shown that, from the merely statistical point of view, Dr. Elam's conclusions are very unwarranted, not to say absurd. We have shown that the death-rate flunctuates wonderfully from year to year, and varies in different districts; that these flunctuations and variations are of such a nature as to be quite inexplicable by a mere reference to the state of medical art; that the death-rate in the last decennium was less than in the previous one; and that, though there has been a very slight increase in the ratio of deaths in the last seven years, not amounting to ·5 per 1000, the ratio of births has increased to the extent of 2·20 per 1000; finally, that we have no registration of sickness, which is indispensable in any attempt to estimate the success of medicine in opposing "the tendency to death."

We confess that we cannot form a high opinion either of Dr. Elam's judgment in the construction of statistics, or of his animus towards modern medical science, when we find him basing upon extremely vague data conclusions so gratuitous, and, as it seems to us, so palpably absurd. Suppose there is a slight increase in the death-rate of the last seven years—though about this, in our uncertainty as to the exact growth of population, we cannot be sure,—we have to associate it with a high birth-rate, with a most eventful decennium, including a spurious prosperity which suddenly and disastrously collapsed, a war which interrupted our principal industry, causing typhus and other diseases of destitution, an epidemic of cholera, and a prevalence of other fatal epidemics. We think a shrewd physician, before writing disparaging things against his own profession, would have exhausted other explanations of a slightly increased mortality; but Dr. Elam seems eager to fasten the blame upon his own art, and makes light of other explanations in order to come down with more effect upon its shortcomings.

We are amply conscious of the shortcomings of medical art; but we think it admits of demonstration that it is more successful now than it has ever been; that Dr. Elam can be demonstrated to be wrong when his conclusions are applied to the case of the particular diseases which he specifies; and that for any additional mortality from them there is abundant explanation without making humbling comparisons of present and past modern medical science.

The cardinal diseases, or groups of disease, Dr. Elam says, kill an increasing proportion of the population; therefore, he argues, medicine is less powerful than it was in the good old days of bleeding and purging and mercury. This is a beautifully simple explanation of a fact that obviously may require a very complex explanation. And we believe it to be as absurd as it is simple. Suppose it to be true that the cardinal diseases are increasingly fatal, we find a principal explanation of that fact in the general conditions of life, in the circumstance of the growth of cities, and the multiplication of persons living in conditions that generate disease, and make its treatment, when generated, exceedingly difficult. Take, for example, the infantile diarrhœa of summer, and the equally fatal infantile bronchitis of winter, in such cities as Liverpool, Glasgow, and Manchester; or take the zymotic mortality of such places. The explanation of the mortality from these diseases, as far as we can judge, is to be found, not in the decline of the science or art of medicine, but in the fact that the multiplication and aggregation of human beings in limited space, and with a most limited and precarious supply of food and clothing, generate in them a diathesis which borders on disease, which tends in its very nature to death, and which it would be unreasonable to expect medical science to cope with. No sensible man ever meant medicine to supersede the use of food and clothing, and the need for a proper supply of air. Dr. Elam talks about "all our sanitary regulations;" but they are a mere drop in the bucket compared with the needs of our impractically huge populations. Witness the state of Glasgow lately.

This explanation of the large mortality is quite consistent with a belief that medicine has immensely improved as an art. The part of Dr. Elam's papers which looks weakest to us is that in which he proceeds to particulars as to the decline of medicine. Does anybody but Dr. Elam seriously believe that the "prodigious increase" in the mortality from bronchitis is to be explained by the infrequency of bleeding now, and the administration of stimulents? We may admit that in both these respects we may have gone to extremes. But can it be seriously maintained that the change of medical practice will explain an increased mortality from bronchitis? The older physicians themselves knew that bronchitis soon depressed the powers of life, and recommended a very careful use of bleeding and an early use of nourishment. Dr. Elam himself would admit that the acute bronchitis which kills is mostly that of children, in which the administration of large quantities of stimulants never has been a fashion, and certainly has been a rarer error than the antiphlogistic practice; and that the bronchitis of adults which kills is more or less chronic—a form of senile degeneration, in fact, in which bleeding or mercury would be absurd, and in which the judicious use of nourishment and even stimulants is palpably beneficial. To believe that the difference of medical practice will explain 2067 deaths in 1838 from bronchitis, and 41,000 in 1866, is as credulous as to believe that these figures give any very exact representation of the comparative amount of bronchitis at the periods.

Let us take the case of another disease which Dr. Elam tells us has perceptibly increased in fatality —namely, pneumonia. Now here we can be particular in demonstrating Dr. Elam's explanation to be untenable. It so happens that two physicians have recorded an unprecedentedly successful treatment of pneumonia, in studying which one almost ceases to think of it as a fatal malady. One has reported sixty or seventy and the other about fifty cases, with the most trifling mortality. Now what is the conspicuous feature in the treatment of these physicians? Exactly the negative qualities of treatment to which Dr. Elam attributes the growing fatality of disease, and in which, in his opinion, consists the decline of medicine as an art—the abscence of bleeding, mercury, and purging. Dr. Elam will ransack the records of the older practice, which he so much admires, in vain for anything comparable to the success of recent physicians in the treatment of acute disease. It would scarcely be too much praise to give to modern medicine to say that it has almost demonstrated that acute simple disease is not fatal, and that the great fatality of diseases that still baffle our art is due more to the imperfection of social and political than of medical science. Dr. Elam's papers are an illustration of what one often sees in the writings of moralists and poets, but which is not common in the literature of science or art—a magnification of the dead past at the expense of the laborious present. It would be as reasonable to prefer the stage coach to the railway, as to prefer Dr. Cullen's treatment of pneumonia to Dr. Bennett's. There is nothing more easy than to make a mistake in the import of figures; but, considering the unusually obvious sources of inaccuracy in the vital statistics with which Dr. Elam was dealing, and the obviousness of the improvements in medical art, he has achieved, it seems to us, an amount of error in his conclusions which is surprising.

◆

ON THE ALLEGED INCREASE OF INSANITY IN ENGLAND.

The Annual Report of the Lunacy Commissioners,* which has just appeared, is likely again to excite attention to the serious question whether insanity is not largely on the increase in this country. It appears that on January 1st, 1869, the total number of insane persons in England and Wales was 53,177, of whom as many as 46,896 were paupers. This is an increase of 2177 on the previous year; by far the greater proportion of the increase—namely, 2020—being in pauper patients. Of every 100 of these paupers, about 61 are in asylums, hospitals, and licensed houses, 24 in workhouses, and 15 in private dwellings with their relatives or others.

Comparing the total number of the insane at the beginning of this year with what it was ten years ago at the beginning of 1859, we find an increase of 16,415. In fact, the number of lunatics has increased 45 per cent. during the decennial period ending 1st of January last, while the population has only increased a little more than 11 per cent. during the same period. Or, to put the matter in a form in which it will be more easily apprehended, there was in 1859 one registered insane person in 536 of the population; there is now, in 1869, one registered insane person in 411 of the population.

Taking for consideration the admissions of certified insane patients as affording a less fallacious index of the occurrence of insanity in the population, we find that they were, in 1859, 9310; and in 1868, 11,213. Thus in the former year the proportion of admissions to population was 1 in 2115, and in the latter 1 in 1931. The average annual increase of the admissions during the ten years has been about 2·04 per cent., while the average yearly increase of the population has been about 1·11 per cent. During the same period, the average number of recoveries in 100 certified insane persons of all classes was 33·93 per cent., while the proportion of deaths to the daily average number under care and treatment was 10·31 per cent.

We have repeatedly pointed out the reasons there are for believing that the main part of the great increase in the number of certified insane persons is attributable to other causes than an augmented liability to insanity in our time. That so many more persons are shut up in asylums than at any other period, is not really because many more persons go mad now than in the days of our grandfathers, but because we give a great deal more attention than they did to bringing them under proper care and supervision, and because of the prolongation of their lives by the humane system of treatment. It may be also that, with a somewhat too jealous vigilance, we detect insanity where our grandfathers would never have suspected it, and think it necessary to shut up in asylums persons whom they would have allowed to go freely about their business in the world, notwithstanding that they might display some degree of eccentricity in their conduct. The consequence has been a steady accumulation of certified lunatics in asylums and elsewhere, which is sufficient to account for a great proportion of the increase in their numbers. For example, there were, in 1861, 9329 admissions, and at the end of the year there was an increase of 1482 in the number of certified patients. In 1862 the admissions were fewer—9078; but there was at the end of the year an increase of 1989 in the number of certified patients. It is obvious, then, that the accumulation of those who do not die, or are not discharged, accounts for a considerable proportion of the increase in the registered lunatic population. Moreover, a very effectual cause of increase in the admissions of pauper lunatics was an Act of Parliament, passed in 1861, which rendered pauper lunatics chargeable upon the common fund of the union, instead of, as had previously been the case, upon the parishes to which they belonged. The effect of this Act has been the removal of many harmless lunatics, idiots, and imbeciles to the asylums; for when the cost of their maintenance no longer fell directly on the parish, all the care of the parish officers was to get rid of the trouble of them as soon as possible. Whether the operation of the Act be sufficient to account for the increased admissions of the last few years it is impossible to say; but there can be no question that it does account for a considerable proportion of them. And, inasmuch as recovery could not be looked for in many of those admitted, they must remain at the end of the year to swell the accumulation of certified lunatics. At the end of last year there was an increase of 2177 in the number of certified patients, although the admissions were only 582 more than those of the previous year.

Apart from the statistical tables which the Commissioners give, and which are an improvement on those of former years, there is but little in their Report which is of general interest. They notice the pressing want of asylum accomodation for the pauper lunatics of the county of Middlesex, and give a detailed account of the steps which they have persistently taken to force the magistrates to erect, without delay, a third asylum for at least 1000 patients, so constructed as to admit readily of extension. It appears that there are now 494 patients belonging to parishes of Middlesex in metropolitan licensed houses; 1494 in workhouses; 57 at Fisherton House, Salisbury; 50 at Hayward's Heath Asylum; others at Haydock Lodge in Lancashire, and some removed as far as the asylum for the North Riding of Yorkshire. A considerable space in the Report is occupied by an account of some fatal casualties and injuries which have occurred in the Hanwell Asylum and elsewere during the past year. Though more than one of these casualties certainly appears to have called for censure on the management, we cannot help feeling that, on the whole, the Commissioners hardly evince a sufficiently considerate spirit in their comments. It is always easy to be wise after the event, and the experience of those among them who have held the anxious and responsible office of superintendent of an asylum must have taught them that it is impossible to prevent some casualties occurring in a large asylum. The weight of their authority in the country, and the value of their Reports, will be alike diminished if these are allowed to become yearly records of petty criticism and censure, based upon *ex parte* statements. In order to be vigilant in supervision it is not necessary to lie in wait for, and eagerly seize upon, every possible occasion for official criticism or condemnation; nor is it wise to do so.

---

* The Twenty-third Report of the Commissioners in Lunacy to the Lord Chancellor. Ordered by the House of Commons to be printed, July 14, 1869.

◆

COLONIAL MEDICAL LEGISLATION.

While we in this country are sometimes apt to complain of the supineness of Parliament in matters medical, it may not be amiss that we should cast occasional glances beyond the four seas of Britain, in order to observe how our brethren fare in countries where they are not governed by King Log, but by King Stork. At this moment cries come to us from colonies so widely separated as Canada and Australia, relating the struggle of the profession against foolish and derogatory laws. It will hardly be credited that in Canada a Medical Council has been formed, "composed of one representative from each of six colleges named, and twelve district or territorial representatives, elected by popular vote of the registered practitioners, and additional members, as provided by Clause or Subsection 2 of Section 8, as follows: 'There shall also belong to the said Council five members, to be elected by the duly licensed practitioners in homœopathy, who have been registered under this Act; and five members to be elected by the duly licensed practitioners in the eclectic system of medicine, who have been registered under this Act.' The Act also incorporates the medical profession under the name and style of 'The College of Physicians and Surgeons of Ontario;' and to become registered under the Act makes the person so registered—be he allopath, homœopath, or eclectic—a full-fleged member, without distinction of any kind whatever, of this College of Physicians and Surgeons." This, however, is not all, for the same Act by which this heterogeneous Council has been established also "provides that students who elect to be registered as homœpathic or eclectic practitioners 'shall not be required to pass an examination in either materia medica or therapeutics, or in the theory or practice of physic, or in surgery or midwifery, except the operative practical parts thereof, before any examiners other than those approved of by the representatives in the Council of the body to which he (or they) shall signify his (or their) wish to belong.' Thus the old homœopathic and eclectic boards are not only perpetuated, but they are placed in a position to hold out a bribe to incompetency. And the bait of a short curriculum and an easy examination—partly beyond the control of the central board—may be safely calculated to catch numbers of student recruits, particularly as their registration makes them members of the same College of Physicians and Surgeons as those passing the higher examination.

There are probably few practitioners in England who are aware that what is called homœopathy has for some time had in Canada an existence recognised by law; and that it has shared that honor and advantage with eclecticism—whatever eclecticism may be. It was found, however, that the homœopathic and eclectic schools, when left free to pursue their own devices, were bountiful in scattering over the country licentiates whose attainments, however considerable as regards homœopathy or eclecticism, were not satisfactory in any other particulars; and this precious measure of so-called "consolidation" is nothing else than an attempt to diminish the injurious results of quackery by forcibly allying it with legitimate medicine. It is only fair to say that the Act by which this strange union was effected derives its power of mischief from provisions inserted into it during its passage through the Legislature, and after its original form had been approved by the profession. At the first meeting of the Council created by it, a strenuous endeavor was made by Dr. Agnew and Dr. Oldright to carry a resolution condemnatory of the Act,—declaring that the coalition forced upon the profession was alike subversive of the cause of science and of professional morality, and seeking the appointment of a committee to memorialise the Lieutenant-Governor in Council. We are ashamed to say that this resolution was not carried, and that ten regular practitioners were found ready to abet the ten irregulars in the Council in their opposition to it. The names of the gentlemen who supported it—Drs. Agnew, Day, Mostyn, Oldright, Bethune, Grant, and C. B. Hall—are worthy of being held in grateful remembrance by all lovers of truth and of professional humor.

At Melbourne the state of things is widely different. There Mr. Casey, the Minister of Justice, has brought into the Legislative Assembly an "Act to Amend the Coroners Act;" and this proposed Act provides,—

> "That if any person shall (except at a school of anatomy) dissect or commence to dissect, or permit any other person to dissect or commence to dissect, any dead body without written authority in that behalf from a coroner or deputy coroner having jurisdiction in the district within which such body is, every such person shall be guilty of a misdemeanor.

In other words, there is to be an end of post-mortem examinations in the colony of Victoria, unless they are performed under a coroner's warrant; so that the state of pathology in Melbourne would, in the course of a generation, approach to its present condition in Mahometan countries! Our correspondence hints that this clause is introduced at the instigation of a small number of medical gentlemen who desire, and under the new arrangement would be likely to obtain, a monopoly of such inquiries; but we cannot believe it possible that such a law can ever either be passed or enforced. It would be more in accord with the progressive spirit of a new country if a post-mortem examination were ordered in all cases of death, as a means to correct registration of the causes of mortality.

Both in Canada and in Australia, however, we may feel confident that any triumph of legislation over truth and common sense will be only of a temporary character, and that the strenous exertions of the profession will remove such blots from the statute book. We may, in the meanwhile, take comfort in the thought that, bad as our condition is in England, it is perhaps better than that of some of our neighbors.

◆

PETTENKOFER'S VIEWS ON THE ORIGIN OF CHOLERA.

In the last number of the *Zeitschrift für Biologie*, Professor Pettenkofer gives a general account of his views on the origin of cholera, concluding with a series of propositions, of which we propose to give a short summary. He commences by observing that cholera proceeds from a specific infectious substance, which can be historically shown to have been generated in certain districts of India for several hundreds of years. In these places it is endemic, just as there are many places in Europe where typhus and intermittent fevers are endemic, and where these also, like cholera, rise at certain periods to great epidemics. There are, however, many parts of India in which cholera cannot be regarded as endemic, since it may wholly disappear even for a long period, but in which it may suddenly reappear in the form of an epidemic after human intercourse with places where it is already rife. The facts now known in regard to its local and seasonal occurrence, not only in India, but in other parts of the world, give strong support to the theory that there is a specific germ or infectious substance capable of being carried from place to place, which, however, in order that it should produce the specific product which induces an attack of cholera in a human subject, requires a determinate local substratum—the specific product proceeding from the mutual action and reaction of the cholera germ and the cholera substratum or soil. The specific cholera germ produced in India may, for the sake of brevity, be distinguished by the letter x; the substratum or soil affording space and time for the development of the germ by y; and the product of these, which constitutes what we understand by the proper poison of cholera by z. On this theory neither x nor y is, *per se*, capable of occasioning an attack of Asiatic cholera, but only z. The specific nature (or quality) of z is determined by the specific germ x, and the quantity of z that is produced at any time or place is dependent on the quantity of the soil y. The nature of x, y, and z is as yet unknown; but it may fairly be assumed that they are all of them of an organic nature, and that x at least is an *organised* germ or body. Dr. Pettenkofer conceives that, taking into consideration the recent discoveries that have been made on the polymorphism of many of the lower organisms, it is a matter of great importance, as constituting a sure foundation for further investigation into the nature of cholera, that the several kinds and varieties—in other words, the several values—of y should be found, deduced from researches upon the metamorphoses of organized substances, and upon the organic processes which takes place in various strata at various depths, under different conditions of temperature. We must admit that in those parts of India in which cholera is endemic, z must be constantly present, though in varying quantities at different times; so that at one period the stationary cholera germ x may occasion comparatively few attacks, and at another period may be in such quantity as to enable it to produce an epidemic. The quantity of z therefore—the presence of x being presupposed—depends in the first place on the quantity of y, and the quantity of y on the local and seasonal conditions of the soil. There is every reason for believing that the specific cholera germ x may nourish itself for a time, and may perhaps even increase to a considerable extent in the interior of the body—as, for instance, in the intestines of man;

but it is to be borne in mind that in a case of cholera the human body is only a field or stage for the operations of *z*, and that without *y* coming into direct communication with *x* the poison *z* would never be produced. The constituents of soils can penetrate into the interior of man from considerable depths in two ways—first through the water contained in the soil, and secondly by the air contained in it; in cholera the last-mentioned mode seems to be that which preponderates. The original germ, the soil, and the specific product—i. e., *x*, *y*, and *z*,—all seem to be capable of distribution even to great distances, not only through the air, but through the agency of human intercourse. When the first of these is brought into a house or a locality, it occasions no disease, but first acts in the proportion that *y*, or the proper soil, exists there, and in which, and by reason of which, it can develop *z*. When that is formed, then the disease breaks out. On the other hand, if a certain quantity of *z* be actually introduced, it may, even without the presence of *y*, induce cholera in persons who from any cause are predisposed to it; but such attacks are the result of the co-operation of *y*, derived, it may be, from some distant place which was necessary to the origination of the imported mass of *z*. In general it appears that human intercourse tends to spread the germ *x* abroad, probably by the excretra, *z* not being present in sufficient quantities to produce the disease, though they are both, in all probability, usually associated together. Clothes moist with the fluid of cholera, diarrhœa, and similar fomites, appear to accumulate *z* and *x* in large quantities, preserving them very perfectly, and enabling them to be transported to great distances; and there is every reason for believing that such clothes may keep the germs of cholera alive for as many as twenty-one days without the presence of the substratum *y*.

◆

STRUCTURE AND MODE OF ORIGIN OF THE LYMPHATIC SYSTEM.

The structure and mode of origin of the lymphatic system, notwithstanding the numerous investigations that have been undertaken with a view to their solution, are questions that are still involved in obscurity. The delicacy of the finer lymphatics is so great that it is only with the most extreme difficulty, and by very practised microscopists, that they can be followed for any distance; whilst the finest are altogether incapable of detection without the employment of reagents. Moreover, the method of injection, which seems at first sight sufficiently available, is here much less satisfactory than in the case of the blood-vascular system, since the injection must necessarily be propelled in opposition to the usual course of the current, and the channels are consequently quickly dammed up by epithelial cells and the fluid contents previously present. On these accounts, however carefully performed and beautifully illustrated, the experiments and statements of Teichmann have failed to obtain general acceptance; and during the last few years a new mode of investigation has been introduced, chiefly by His, Recklinghausen, Hartmann, and Chrzonsczczewsky, in which the tissues are strained by nitrate of silver. For this purpose the solution of the nitrate must be very dilute, varying from 1 per cent. to 1 per mille, and the preparation should be allowed to remain in it for a few seconds only, then removed and washed in cold distilled water. On examination with the microscope, it will be found, after a short time, that, whilst connective tissue generally is more or less deeply stained of a blackish or brownish color, epithelial cells, wherever present, are rapidly rendered distinct in consequence of their lines of junction being similarly tinted; and this is by some supposed to be due to the presence of an intercellular substance, which precipitates the silver more readily than the cell-walls; whilst by others it is attributed to the cell-wall being seen in profile at the margins, whilst elsewhere its plane surface only is under observation—just as, in looking at a sheet of glass edgeways, a deep-green color may be seen, though the plate may otherwise appear to be colorless. Proceeding by this method, and examining the diaphragm in particular, M. Recklinghausen believed that he was able to show the course of even the finest lymphatics; for these channels then appeared as clear, elongated spaces, the walls of which were composed of epithelial cells of somewhat oval form and sinuous outline, and were continuous with other still finer channels, to which he applied the term "juice canals" ("saft canälchen"). He also described certain apertures through which he believed fat or oily material might be absorbed. A paper has, however, recently appeared in Brown-Séquard's "Archives de Physiologie," by M. Robinski, in which he calls in question these results, and denies the existence of such vessels as those described by Recklinghausen. It should be noticed, in the first place, that a source of error exists in regard to the use of nitrate of silver in these investigations of such importance as to induce Hartmann to discard its use altogether; for it is found that if a drop of the nitrate solution be poured on a little collodion or solution of gum arabic, figures are formed closely resembling the contour lines of epithelial cells. How then, it may be reasonably asked, can we be quite sure that the lines we see in any given specimen are not altogether artificial? But even granting that a difference may be perceived by an experienced microscopist, M. Robinski has noticed that, after the nitrate of silver solution has been applied, the epithelial cells pass, as it were, through two stages: in the first, the epithelial cell-walls are all tinted, and the contour lines come out with great distinctness; and in the second, whilst certain of the cells undergo no further change, others become deeply blackened, and amongst these the contour lines are no longer apparent. Thus an artificial and illusory appearance is created, clear spaces of elongated form presenting themselves in which the contour lines of the epithelial cells are very distinct, together with dark portions in which no contour lines can be seen. The former constitute Recklinghausen's lymphatic vessels; the latter the surrounding tissue. It seems, then, that further evidence must be obtained before an unqualified admission can be given to the views of Recklinghausen and others, not only in regard to the nature and distribution of the lympatics, but also in regard to the mode by which fat is absorbed. We may just notice one interesting point referred to by M. Robinski, which has a practical application. It is that solutions of nitrate of silver, even when very dilute, diminish the cohesion of the epithelial cells, both amongst themselves and to the membrane on which they lie—a peculiarity which, as he suggests, may serve in some measure to explain the advantage derived from the employment of such solutions in conjunctival and corneal affections, since, by aiding the removal of altered epithelium and of pus-corpuscles, it may accelerate the production of new and healthy cells, and thus promote the reparative processes.

Medical Annotations.

"Ne quid nimis."

THE HEALTH OF THE POLICE.

A CIRCULAR has recently been addressed to the divisional surgeons of the Metropolitan police by Mr. Holmes, the chief surgeon, containing a report of the sickness of the force during 1868. The total force attended by the divisional surgeons (including public carriage attendants, and dockyard police) was 9324, and the average daily per-centage of sick was 4·22. If the detached men are deducted from the above numbers, the percentage of sickness is reduced to 3·208; and it is gratifying to notice that, during the last three years, the average daily sickness has diminished from 5·5 per cent. to 4·22.

The chief surgeon appends some remarks upon the system of detached sick leave at present in use in the Metropolitan police, which we think may usefully be made public. He says:—

"This kind of leave is given by the Secretary of State on the recommendation of the chief surgeon, if approved by the Commissioner, mainly to three classes of patients: 1. To those who have been severely injured on duty, being of any standing in the service, or those who, having served for more than five years, are suffering under complaints which, though not likely to enable them soon to rejoin, yet hold out a prospect of ultimate cure. 2. To men who have served long enough to entitle them to be recommended for pension, and who are unfit for further service, but who have children dependent on them, and to whom it appears desirable to afford time to look about them for some means of eking out their pension before finally discharging them. 3. To men who are in all probability permanently unfit, but in whose case it seems desirable to have another opportunity of examining them before reporting them. In this third class of cases the pay is the same as the pension; in fact it is a temporary pension; but with the liability of being again called on for service in case of recovery. In the second class it is not usual to extend the indulgence longer than three months, and on sick pay. In the first class the leave is sometimes extended to longer periods; and in the case of men severely injured on duty, or who have contracted serious diseases by exposure on duty, full pay is not unfrequently granted. To these perhaps ought to be added a fourth class, happily not numerous, of men who are dying of chronic diseases (mainly consumption), who could do nothing for their own support, and if discharged from the force must die in the workhouse. Such patients are occasionally (though rarely) kept on detached leave for very long periods till their death.

"All detached men are considered as having temporarily ceased to belong to the strength of the force; their place in the division is supplied by others, and they can go where they please. In the event of their remaining at home, however, they usually receive the care of the divisional surgeon."

The deaths in the force amounted last year to 63, not reckoning the dockyard division, or the public carriage attendants; or, taking the number of men in the several divisions at 8383, the percentage of deaths was ·75 per cent., the death-rate in the Foot Guards being 29 on a strength of 5600 men, or only ·51 per cent. The causes of death in the police force are:—Consumption, 27; bronchitis, 5; pneumonia, 2; small-pox, 2; typhus fever, 3; typhoid fever, 2; other fevers, 4; rheumatism and rheumatic fever, 2; erysipelas (in one case the result of injury on duty), 3; blood-poisoning from injury, 1; diphtheria, 1; disease of brain, 1; apoplexy, 1; disease of kidney, 4; abdominal abscess, 1; stricture of bowel, 1; aneurism of aorta, 1; cancer (?) of liver, 1; cancer of tongue, 1; total, 63.

A very similar return just issued by Mr. Borlase Childs, Surgeon to the City of London Police Force, shows that that fine body of men continues to enjoy a high standard of health. During the past year (June, 1868, to June, 1869), out of a total strength of 702 men, 382 were admitted into hospital, 4 died, and there was an average daily sick-list of 11·42. The City police differs from the Metropolitan force in having an hospital of its own, to which the sick members of the force are admitted for treatment, instead of being treated at home, or obliged to seek admission into public charities, which are themselves heavily rated for the support of the police. Mr. Childs institutes a comparison between the two methods much in favor of the former. Thus in the last *two* years before the Police Hospital was opened, the number of admissions per thousand was 1003·45, the ratio of deaths, 17·29; and that of the constantly sick, 27·0; whilst during the *three* years subsequent to the building of the hospital the admissions fell to 576·34, the deaths to 6·83, and the constantly sick to 16·62 per thousand. This shows, therefore, a reduction of 423·4 in the ratio per thousand of the admissions, and of 10·16 in the number constantly sick since proper hospital accommodation has been afforded; and it seems not unreasonable to suppose that a similar reduction might be effected in the ranks of the Metropolitan police were proper hospital accommodation provided for them.

The diseases of the City police force during the past year were of the ordinary description—catarrh, rheumatism, and gout contributing two-thirds of the total admissions into hospital. Of the four deaths, two occurred suddenly out of hospital: one from heart disease, and the other (as certified) from chronic bronchitis. The two deaths in hospital were from pneumonia and disease of the liver respectively.

THE PRIVILEGE OF MEDICAL WITNESSES.

It has fallen to the lot of Dr. Bateman, of Norwich, to bring to light a question of great public importance. He has called attention to the fact that a medical man, when summoned as a witness, has no privilege to conceal matters that have come to his knowledge only in the course of his professional duties. An attorney, it is well known, has this privilage; and practically speaking at least, a clergyman also has it. The public opinion that makes law would resent any endeavor to force from a clergyman matters that had been communicated to him in the discharge of his spiritual functions. But a doctor has not this privilege, although the reasons why he ought to have it are so numerous and so manifest that probably most doctors have hitherto taken their possession of it for granted. It seems, however, that any man's medical attendent may be put into the witness-box, and called upon to divulge the whole medical history of his patient's life. Dr. Bateman cited the case of a female servant, to whom a legacy had been left by her mistress, and who was charged by the heir-at-law with having exercised undue influence over the testatrix. Some years before, the legatee had aborted; and it was sought to damage her character by calling her medical adviser, and examining him with regard to the nature of the illness for which he had attended her. He refused to reply; and his refusal came before Vice-Chancellor Kindersley, who decided against him, thus putting him to an expense of £30 for costs.

Now, the common sense of the matter lies in a nutshell. Perhaps once in ten years, or once in twenty, a criminal might escape from justice, or a cival suit might be wrongly decided, for want of some piece of evidence known only to a doctor, and known to him only in his professional capacity. On the other hand, it is a matter of daily and continual importance to the community, that sick people should tell their doctors the whole truth, without any reservation; and this confidence will be sorely shaken when it is generally known that the truth thus imparted may be hereafter brought against them in a court of law. Our profession has no sympathy either with criminals or with injustice; and its members, if they had the privilege for which we contend, would be very unlikely to claim it without grave reason for doing so. But it seems strange that the law, which will not allow a magistrate or a policeman to receive a statement from an uncautioned prisoner, should tear away the veil that hides the sanctity of the consulting room.

WOMEN AND THE MEDICAL PROFESSION.

One of our lay comtemporaries is greatly gratified at the fact that at last there is a University in Great Britain where women may study medicine, albeit in separate classes—an arrangement not thought necessary in either France or America. A majority of the members of the Senate of the University of Edinburgh have decided to this effect. We believe the sanction of the University Court and of the Council of the University must be given to this permission before it can be acted on. It is scarcely likely that these bodies will reverse the concession of the Senatus; and if they do not, it will rest with the ladies of the country to make up a medical class or classes in the University. We do not see with our contemporary that because women have bodies they should study medicine. Children have bodies too, whose diseases have special characters of their own; but nobody ever thought they should become practitioners. The best reason for giving ladies an opportunity of studying medicine is that by so doing an alleged grievance is removed. They will find it more difficult to become medical practitioners than to complain that they are prevented from doing so. There is a notion that medical practice is a good calling for women. It is doubtful if any calling is more unsuitable to their nature, whether we have respect to considerations of health or of taste. The diseases of women and children might be studied by them without violence to those feelings of delicacy which at present, rightly or wrongly, would debar them from practice among men. But it is a very grave question whether ladies are fitted to do the laborious work which is implied in midwifery practice, and which is exceedingly trying to strong men. Fancy a young lady just out of her teens commencing practice, and receiving a summons in the middle of the night to a distant case. We can imagine no solution of such a difficulty so natural as a friendly understanding with the youngest practitioner of the other sex that he would gallantly act in such emergencies. And we need not suggest the kind of partnership in which such obvious amenities would be likely to end. It is said ladies would prefer lady practitioners: this is very doubtful.

THE SUPPOSED CHOLERA FUNGUS.

The July number of the *Monthly Microscopical Journal* contains some critical observations on Dr. Hallier's hypothesis as to the origin of cholera from parasitic fungi, by one who has every title to be heard on such a subject—the Rev. M. J. Berkeley. After stating that two of the most promising young officers of the Indian and British medical services respectively had been selected to investigate the subject fully in India, Mr. Berkeley proceeds to show that Dr. Hallier's observations were of altogether too vague and undecided a character to inspire much confidence. Great pains, we are told, "have been taken by Mr. Thwaites, the acute Director of the Botanical Garden at Perideniya, in Ceylon (than whom few have a more intimate acquaintance with cryptogamic plants), to acquire every possible information both in India and Ceylon. All his inquiries, however, have failed to detect a single fungus on the rice plant even distantly allied to the Urocystis (*Polycystis Auct.*): indeed the only fungus which has been detected is a little species of Cladosporium, differing from the universally diffused *Cladosporium herbarum*, and which, like that, is clearly an aftergrowth, and not a true parasite. Amongst some 7000 numbers of fungi from North and South Carolina not a single one occurs on rice." Mr. Berkeley adds: "An attentive perusal of the report of what Drs. Cunningham and Lewis saw at De Bary's, and the instructions derived from him, as well as that of their conference with Dr. Hallier, will be quite sufficient to make us receive Dr. Hallier's views with much less attention than they have attracted in certain quarters." In alluding to the opportunity he had of examining Prof. Huxley's preparations, Mr. Berkeley says he saw sufficient to hope that Prof. Huxley would continue his investigations, and he thinks that he has exercised a very wise discretion in not publishing his observations too hastily. The preparations given by Hallier as to the connexion of fungi with scarlet fever &c. proved absolutely nothing. It would be folly to blind the eyes to the experiments of Pouchet, Child, Bennett, and others, as to what is called the Atmospheric Germ theory; but, whatever may be the origin of the minute bodies in question, whether from pre-existent spores or the fortuitous concourse of chemical and other energetic forces, it is a matter of immense importance to ascertain whether they have any connexion with disease, and it is obvious that the question as to their origin becomes essential. At present, however, according to Mr. Berkeley, there is no proof whatever that different fevers owe their origin to different parasitic fungi, or that especial forms of the same common species appear constantly in the several forms of fever, a circumstance for which there is better evidence perhaps as regards certain skin diseases. It is, however, unfortunate that writers on these subjects are seldom persons who are well acquainted with fungi.

PUBLIC VACCINATION.

Our lay contemporaries will excuse us for expressing a hope that they will do nothing inconsiderately to prejudice vaccination in the estimation of the public. In saying this, we are glad to acknowledge the general discrimination and sound sense with which they treat the subject, though we confess to reading a few recent editorial deliverances with the feeling that they are unduly calculated to gratify the fanatical Anti-vaccination League, which would plunge the nation again, if it had its way, into all the horrors of the old small-pox *régime*. The *Pall Mall Gazette* and the *Evening Star* reasonably urge that the vaccination of a poor man's child should be done with as much care and caution in the selection of matter as are exercised in that of a rich man's. The plan of vaccinating promiscuous crowds of children in large parishes by one or two vaccinators ignorant of the children from whom they vaccinate and unknown to their parents, is one that has never had our approval. It would only be proper to insist upon the source of all matter used in the vaccination of a child being recorded in a book, together with the general history and character of the child from whom it was taken. By the system of supplying matter on points, it is quite impossible to be particular, and a child may be vaccinated with matter from various children. Having admitted thus much, we still doubt whether our contemporaries do full justice to the care exercised by public vaccinators in the selection of children. It should be remembered that the transmission of serious or of syphilitic disease by vaccination is gravely doubted by men of the largest experience and the soundest judgment; and even if we admit that it may occur, it does so with such infrequency as not to affect the wisdom of the existing compulsory law. That a medical practitioner has been found to object to having his child vaccinated, and that another child has died after vaccination from erysipelas, seem to us very slight facts compared with the mortality, the disfigurement, the blindness, and other evils which would be the certain consequences of a relaxation of the Vaccination Act, or with the complete annihilation of small-pox among the nurses of the Small-pox Hospital for thirty years by revaccination, and the almost complete extinction of death from small-pox in Scotland and Ireland by a vigorous vaccination. These results are too splendid and palpable, we should hope, to permit any relaxation of the principle of recent legislation. They point to more vaccination and to revaccination. Nobody now maintains that a single vaccination is a perfect protection. But it is ascertained that after vaccination the mortality of the disease is trifling; and the experience of revaccination of the officials at the Small-pox Hospital absolutely proves that, with no serious inconvenience at all, the protection from small-pox by vaccination may be made complete, simply by repeating the operation. The British public will have its panics and its grievances; but it becomes steadily more reasonable, and we mistake if experience should prove that it prefers to the occasional slight evils of vaccination the horrors which will quickly accrue from the neglect of it. It is only fair to the poor to say that they do not dread vaccination, as one of our contemporaries thinks they do. As a rule, they willingly accept the operation as a boon.

REMARKABLE CASE OF HAIRY NÆVUS.

The occurrence of moles covered with fine downy hair is by no means uncommon; but the most extraordinary example of this deformity we have ever seen was brought to our office a few days since by two Spanish gentlemen. The subject is a dark-complexioned, rather short Mexican-Indian woman, of about twenty-two years of age, and who, from the singular nature of her deformity, and the history that attaches to her mother, has received the name of Maria the Ourang-outang. It is stated that the mother of this woman belonged to the Indian tribe called the Quiché, inhabiting the province of Soconusco, on the Pacific coast of Mexico. At the age of twenty-five, she became servant to a Spanish family, and ten years afterwards disappeared in the mountains, where she remained for several years. A Spanish merchant, so goes the tale, travelling in that part of the country, met the Indian with a child, the subject of this notice, then five years of age, and, marking her peculiarity, purchased her. Both the mother and child were in a state of nudity, and the mother informed the gentleman that it was the offspring of an ourang-outang. The Spaniard took the child home, and reared it to the age of fifteen, when she made her escape, and sought to gain her living by exhibiting herself. She was recaptured, and brought over to this country by the Spaniard who first endeavored to reclaim her. The girl, when stripped, is well proportioned, and presents precisely the appearance of having on a pair of bathing trousers, or *caleçons*, made of the skin of some animal. The hairy surface extends to about the level of the umbilicus in front, and the sixth dorsal vertebra behind, covers the buttocks, is replaced in front by the ordinary hair of the pubes, and extends about half way down both thighs. The surface of the skin of the body generally is smooth and soft, but that of the hairy surface is blackish, coarse, and furfuraceous, reminding the observer somewhat of the skin of the back of a pig; the hair is short, black, and slightly curled. The margins of the hairy surface are sharply defined. Its sensibility is stated to be as acute as that of other parts of the body. The patient, who seemed to feel her condition acutely, has an agreeable expression of face, with full dark eye, and the ordinary Mexican type of countenance. The supposition that she owes her parentage on one side to an ourang-outang, we utterly deride; and although she has been brought over to this country for the purposes of exhibition, we trust that so demoralising a procedure will be prevented; yet it might be expedient to obtain a model of her for the Pathological Museum of the College of Surgeons.

INFLUENCE OF METEORS ON HEALTH.

Here is a subject for medical philosophers and those fond of abstruse questions. In an article on "The August Meteors" in our contemporary, the *Spectator*, the possible influence of meteoric matter on the animal life of the earth is touched upon. Professor Herschel has succeeded in examining and analysing, by means of the spectroscope, the light of seventeen of these bodies; and he has detected the well-known yellow bands produced by sodium in combustion. It is strange to consider what becomes of all the sodium thus dispersed throughout the upper regions of air, as there can be no doubt that, in some form or other—mixed or in combination,—it reaches the earth. The very air we breathe must at all times contain, according to our contempory, in however minute a proportion, the cosmical dust thus brought to us from out the interplanetary spaces. As the different meteoric systems are differently constituted, the air we breathe is continually being impregnated with various forms of metallic dust. It is not certain that deleterious results do not occasionally flow from an overdose of some of the elements contained in meteors. As far as facts and dates are concerned, it might be plausibly maintained that a meteoric system has brought plague and pestilence with it. The "sweating sickness" has been associated (though not very satisfactorily, it must be allowed) with the thirty-third year return of great displays of November stars. A notion has even been entertained that the destruction of Sodom and Gomorroh was brought about by an unusually heavy downfall of sodium-laden meteors. Speculations and hypotheses of this kind, no doubt, make up some interesting reading; but they are, it appears to us, quite barren of all utility. We need not go to interplanetary spaces as the source of sodium compounds in the atmosphere. The spray of every wave that dashes itself against a rock or becomes beaten into surf, causes the dissipation of a certain amount of salt into the atmosphere; and Prof. Roscoe goes so far as to conjecture that the soda, which all accustomed to work at all with the spectroscope know to be present everywhere, may, by its antiseptic properties, exert a considerable influence in maintaining the public health. The invigorating and beneficial effects of sea breezes may be due to the large amount of soda, in a minute state of subdivision, which they contain. When invalids go to the seaside—which, indeed, all the world seems bent on doing just now,—they little think that they are possibly being cured in more senses than one.

HEALTH OF CUSTOM-HOUSE OFFICERS.

The report of Dr. Walter Dickson, R.N., medical inspector of Her Majesty's Customs, upon the health of the out-door officers, watermen, and other inferior officers of the establishment, during the year 1868, appears in the Thirteenth Annual Report of the Customs Commissioners, just issued. The total strength of the force stationed in London and Gravesend during the year was 1047; the total number of cases of sickness was 862, and the number of days' sickness was 14,494, the mean daily number on the sick list being 39·5, or 3·7 per cent. of the strength. The admissions to the sick list were in the proportion of 82 per cent. of the strength, the average duration of each case was 16·7 days, and the time lost to the service through sickness or accident was 13·8 days per man. The mortality from disease was at the rate of 12·4 per 1000, as compared with 4·3 in the preceding year, when the time lost amounted to 12·2 days per man. It must be remembered that the mortality of the general population of the country was higher in 1868 than in 1867; and further, that with a comparatively small body of men, one year's death-rate will often be found to differ from that of another through exceptional causes unconnected with the general state of health of the force. Dr. Dickson observes that phthisis is less prevalent among the Customs force than either in the military services or among males of corresponding ages in the general population; and he notes also that of late years the ratio of deaths and disablement from this disease has sensibly diminished. The unfavorable conditions of the service to those with a consumptive tendency lie in the inevitable exposure to cold in barges, or on wharves, or in the floors of warehouses where the air is often laden with dust, and blows in strong draughts, and in the long and fatiguing walks to and from their labor. An amelioration in the distribution of duties, more especially of the waterguard, whereby the times of work and rest are more fairly allotted than they were some years ago, and river and night duty is rendered much less irksome, also the ready access at all times to medical advice and treatment now afforded, are mentioned as having exercised a beneficial influence in regard to the diminished prevalence of consumption in the force.

CONTINENTAL APPOINTMENTS.

The recent *concours* for the nomination of two physicians to the Paris hospitals has just terminated, the successful candidates being MM. Brouardel and Lancereaux. This latter gentleman is well known here through the translation of his important work on Syphilis. Some difficulties had arisen touching this *concours*. The first place had been gained by M. Brouardel; but, in respect to the second, three of the candidates, MM. Ball, Lancereaux, and Baudot, had come in at a dead heat with an identical number of marks. As this eventuality had not been foreseen and provided for by the existing bye-laws, a division took place among the members of the jury. Some were for terminating the *concours* by a decisive vote; others for enforcing a supplementary test between the three candidates. This latter opinion having prevailed, one of the judges sent in his resignation; and M. Baudot also protested by retiring from the field and writing a letter to the prefect of the Seine. The supplementary test was then undergone by MM. Ball and Lancereaux, when the latter was elected.

As usual, the 15th of August (the Emperor's fête-day) has been the occasion of a gladdening shower of decorations upon the medical body of France. Several well-deserving medical workers have been promoted to the Legion of Honor. Among them we may mention the following: Professor Wurtz, dean of the Faculty, who has been made a Commander; M. Jolly, of the Academy of Medicine, who has become an Officer; and Professor Dolbeau, MM. Potain (of Necker), M. Raynaud (vice-professor), Dénucé (of Bordeaux), Schutzenberger (of Strasburg), and Anglada (of Montpellier), who have been made Knights. Among the list of the favored there also appears the name of an editor of a French medical journal—M. Martin Lauzer.

Professor Gluge, of Brussels, has been elected Rector of the University of that city, at a general meeting of the several Faculties.

UNITED STATES NAVY.

THE newly-appointed Surgeon-General, Dr. Wood, has before him the task of rendering his department more popular. During the civil war our profession partook of the enthusiastic sense of duty to serve anywhere, and their navy was fairly supplied with proficient physicians and surgeons, of whom a large proportion served temporarily only, claiming their discharge when the war was at an end. The peace complement of the service of 200 medical officers is now at least one-fourth under its effective standard. This deficiency arises from the dissatisfaction of the profession with the status of the medical officers from the same causes as once existed in our own navy—chiefly "inequality of position, relatively, with army surgeons." We fear that sea-life engenders a disposition in the class of executive officers to treat all other classes as necessary evils, to be kept in order by restrictive regulations, as if striving to assume command in matters purely nautical. Out of this has grown the notion that "rank" and "command" are almost synonymous; and relative rank, with its several advantages, are, on that principle, withheld as long as they can be from non-executive officers. This is very unsatisfactory to medical men, who, in general society, are quite the equals of the dominant class. Our brethren are now boldly asserting their rights, and are endeavoring to bring Congress to the opinion now generally adopted throughout European navies. They ask that as the late war introduced the grade of admiral into their navy, so new grades, equal to our own inspector-general and deputy inspector-general, should be instituted among themselves; and that these new ranks should carry, relatively, increased pay and privileges. As we know the value of those things in public services to give weight to professional representations, we look to the changes as necessary to the welfare of the sick and wounded seamen in every navy; and we entertain no doubt of their ultimate concession by a Republican nation.

The whole matter is ably discussed in a pamphlet by a Medical Officer "On the Principles of Naval Staff Rank," which must lead the opinions of many representatives in Congress towards supporting the status of the profession in their navy; so that the smallness of the permanent medical staff may to some extent be counterbalanced by its great efficiency.

INSANITY AND CRIME.

Two cases have occurred at the Surrey Assizes which forcibly illustrate the great difficulties in dealing with the question of insanity. A farmer was convicted, on the evidence of his own child, of having strangled his wife, with whom he had previously lived on affectionate terms. There was no apparent motive for the act; and although there had been no signs of insanity, there was distinct hereditary predisposition, and great excitement the night before the murder. The other case was that of a girl named Lucy Mills, who threw a young child, her nephew, over the cliffs at Rottingdean. This woman had been discharged as cured from the Sussex County Asylum eighteen months before.

The question of interference in such cases is one of extreme delicacy. The premonitory symptoms of dangerous madness are frequently so obscure, and are always so liable to misconstruction, that it would be quite impossible to make them the grounds of confining the subject of them in a lunatic asylum. It is no light matter to shut up a sane person with a hundred madmen; and if a patient is only slightly affected, it is scarcely possible to imagine a mode of treatment more likely to aggravate the disease. These cases, indeed, illustrate one of the difficulties of the asylum mode of treatment; since there is no medium between allowing the patient to enjoy entire freedom, and complete and most objectionable separation from home and friends. As regards the case of the female, there can be no possible justification for keeping a sane person in perpetual confinement, under the plea that the intellect may again give way, or under the fear that some untoward act may take place years after the discharge. Yet it cannot be doubted that such persons should, in the interests of society, be subject to some mild surveillance for at least a year or two after their discharge, instead of being trusted, as they now are, even to the extent of having the care of young children.

The asylum system must receive a fuller and more critical examination than it has ever yet had; the more so as the medical superintendents have a heavy responsibility thrust upon them as to the retention and discharge of patients, without having, at the same time, adequate machinery for the protection of their conduct from misconstruction, their patients from unfair treatment, and society from wrong.

DR. WILLIS IN JAPAN.

Amongst the most interesting parliamentary papers are some Reports on Journeys in China and Japan. Dr. Willis, her Majesty's vice-consul at Yeddo, has paid a visit to the Mikado's army, and was able to administer medical advice and assistance to 1600 suffering and wounded Japanese soldiers. He attended personally to the requirements of 600 wounded, and performed 38 operations, varying in magnitude from removal of a finger to amputation at the hip-joint. Of these about one-half recovered. He extracted 23 bullets, and removed dead bone from upwards of 200 patients. He also instructed the native doctors in the treatment of the wounded. He says that the sick are provided with all the ordinary requirements of Japanese, and were well cared for considering the lack of discipline and knowledge amongst the doctors and attendants. Dr. Willis found the enemy's sick much worse off, and he observed that they were often killed. He therefore expressed his regret to the Mikako that he was unable to bear testimony to the clemency of the Japanese Government; the result being that he was subsequently invited by the Prince commanding in chief to proceed to Wakamatru, directly it was taken, to attend the prisoners belonging to the Aidzu clan.

Dr. Willis gives an interesting account of the country he passed through, and in recognition of his services he has received a letter of approval from the Japanese Minister of Foreign Affairs, accompanied by a suitable present.

SWIMMING BATHS.

Prof. Tyndall has described in terms which must excite the longings of dusty Londoners the pleasure he has experienced in taking a header into the Rhine, into the "melancholy Spree," and in the Hartz, through lack of anything better, into a marl pit. The *Spectator* indulges us with visions of what an ideal swimming bath should be—that is, it should be 1000 ft. square, covered with glass, lined with white tiles, and with a depth of water varying from 4 ft. to at least 14 ft., and renewed momentarily by a running stream. The dressing boxes should open on to the water, and the air within the building kept at a steady temperature of 70° F. But the *Spectator* dissolves the illusion by telling us that the single difficulty would be the supply of water, which is nearly insuperable. The *Daily News* proposes swimming tanks at Richmond and Hampton Court; but it is obvious that, to be of any general use, swimming baths must be within an easy distance of the people, and that the object must be, as Prof. Tyndall proposes, to replace the "mere delusion of the tub for a header in the Thames." It seems to us that, with a process of rough filtration, Thames water might now very properly be used. What we want is a floating dock moored in the river, with a tank lined with tiles, and provided with heating apparatus. A small donkey engine would keep up a continual stream of filtered water, and raise the tank for cleansing purposes. The sides would be occupied by bathing rooms, and the centre would be roofed with glass. In summer time an addition should be made by enclosing a portion of the river in a temporary grating, which would suffice for the people who now disport themselves in the filthy Serpentine. We believe such an institution would be highly remunerative, and, if moored off the centre of Charing-cross Railway Bridge, would form no serious obstruction to the navigation.

HEALTH-CONDITION OF THE CONTINENT.

Diseases of the alimentary canal are now prevailing over the whole of Europe, whilst in the greater number of the cities of the Continent the eruptive fevers seem to be on the decrease. During the week from July 25th to 31st, the mortality in Paris amounted to 807, and out of this number 48 cases are put down to diarrhœa, and 5 to cholera. In Lyons, from July 14th to July 28th, 234 patients were admitted into the wards of the Hôtel Dieu; and whilst 62 of these cases appertained to various gastric disorders, only 4 included the eruptive fevers. At Marseilles, numerous cases of cholerine have been observed, many of which have proved rapidly fatal. From July 14th to 25th, the mortality in this latter town had risen to 401, among which number 225 were children. At Rome, an epidemic of dysentery is now raging, and has rapidly increased the rate of mortality. The same disease is also prevalent at Vienna. Gastric disorders, therefore, form the present "medical constitution" of the Continent, varying from simple indigestion and diarrhœa, which is most common, to cholerine and cholera. The most prevalent affection, after those we have named, is typhoid fever. There has been a recurrence of this malady at Naples; Madrid is not yet quite free from its attacks, and we have again to record the names of a few medical men who have swollen the list of victims carried away by this deadly scourge. Typhus and typhoid fever are prevalent at Vienna. In this latter city, 301 deaths have been registered during the week July 22nd to 28th: as usual, a large proportion of deaths (72 cases) must be put down to phthisis. Forty-two deaths had been caused by diarrhœa, and 21 by typhus. With the variations of the weather, an increase of malarial affections has been observed in the chief cities of Sicily.

THE VACCINATION ACT.

The deaths from small-pox in Leeds, in 1866 were 59, in 1867 were 46, and in 1868 only 17. This admirable result was attributed, at the recent meeting of the British Medical Association, to the persevering efforts of the Board of Guardians in pushing vaccination and in recommending revaccination. We would at once encourage and humble the Leeds authorities by reminding them that the whole annual mortality from small-pox in Ireland is little more than happened last year in Leeds. The Report of the Inspector of Vaccination contains a practical refutation of the statement that the people dislike vaccination. Out of the 1491 cases of children returned and found unvaccinated in the year, there are only three parents who have refused to allow their children to undergo the operation. The penal clauses have had to be applied in only six cases during the year, and in three of these the law was afterwards complied with. The inspector reports that the mortality amongst unvaccinated children is greater than that amongst the vaccinated. It is refreshing, in the midst of much sensational nonsense that is being talked about vaccination, to come upon such facts; and the authorities of Leeds deserve credit for so energetically applying the Act.

THE E-TSZE HOSPITAL, HONG KONG.

This horrible place was originally built for the purpose of receiving dead bodies, which had been usually exposed upon the hill sides. Dr. Murray supposed it to be a Chinese city of the dead. But under the charge of a Mr. Caldwell, who calls himself an emigration agent, it has been used as an hospital, to which incurable cases have been sent. An inspector of brothels, in making an accidental visit discovered eight or nine corpses laid out in front of the place, and from subsequent inquiries it was found that as many as 200 persons had been admitted annually, the ratio of mortality being such as to almost exclude the chance of anyone coming out alive. A coffin maker stated that he supplied from one to four coffins every day. Drs. Murray and Cochrane saw the dying and the dead wallowing together in floods of filth, and covered with vermin; they were shut in locked cells without egress. It was difficult to determine whether some of the patients were alive or dead. In one instance, where, according to the keeper's report, the whole mass of corrupting bodies had ceased to live, a living wretch was aroused from his lethargy, and recovered to describe his sufferings and wrongs. There was a complete want of attendance of any kind, of ventilation, of cleanliness, and even of food. We are happy to observe that Lord Granville has officially addressed a letter upon the subject to the governor of Hong Kong.

CONTINENTAL APPOINTMENTS.

The recent *concours* for the appointment of two surgeons to the Paris hospitals has been followed by the nomination of MM. Lannelongue and Dubreuil. Professor Czermak, who has been called from the University of Jena to that of Leipsic, received a most flattering tribute of admiration from the students and population of Jena on his leaving that city. Professor Salvatore Tommasi has been appointed Dean of the University of Naples for the triennial period 1869 to 1871. Professor Zanobini has definitively taken possession of the chair of Obstetrics at the University of Genoa. Through the recent ministerial changes in Spain, Don Jose Maria Echegaray has been installed in the Department of the Fomento, in the enjoyment of which office his predecessor had accomplished very important changes touching the liberty of teaching, the form and curriculum of the medical schools, &c.

The School of Medicine of Paris has received a large bequest from one of the French Councillors of State, who left the sum by will for the purpose of creating a Chair of the History and Philosophy of Medicine, expressing the desire that M. Cusco, of Lariboisière, should be the first occupier of the chair. The Faculty of Medicine is somewhat embarrassed with regard to the proper manner of realising this scheme. A Chair of the History and Philosophy of Medicine does not seem quite so desirable, for the time being, as one of Ophthalmology; and, besides, M. Cusco himself, who has studied the diseases of the eye with peculiar attention, considers that he is far more fit to occupy a chair of this character. The School of Medicine is now *en pourparlers* with the family of the deceased, in the hope that they will consent to the proposed change. It may therefore be expected that the Faculty of Paris will soon be provided with a chair which it so much requires.

It is maintained by some French alienists that individual liberty is not sufficiently guaranteed in France in alleged lunacy cases; and some writers express a wish that an institution analogous to our Commissioners in Lunacy should be founded. In Italy, however, as stated by Dr. Grilli, in *L'Imparziale*, of Florence (July 16th, 1869), the law does not inquire whether the patient is a dangerous lunatic or not; but no one can be taken to and retained in an asylum, except he or she be placed before a court of law. The same author dwells upon the fact that this law has been in force there thirty years, and that no complaints whatever have reached the authorities.

We note with perfect horror that in Roumania, where the Jews at the present time are suffering from the most cruel persecution, women in the agonies of childbirth have been dragged away from their couches. In vain did they implore to have only one day's respite granted to them. This is the statement conveyed in a letter to Sir F. H. Goldsmid, in which his aid is sought on behalf of the persecuted. Will such fiendish and outrageous behavior be tacitly allowed by the European Governments?

Correspondence.

"Audi alteram partem."

THE DUBLIN QUARTERLY AND DR. WHITEHEAD OF NEW YORK.

To the Editor of The Lancet.

Sir,—Will you please allow me briefly to refute the following imputation of "inaccuracy and prejudice," by Dr. Edward H. Bennett, in the August number of the *Dublin Quarterly Journal of Medical Science*, p, 190:—

"Dr. Whitehead publishes an analysis of fifty-five operations for cleft palate, collected from various sources; but we can place but little reliance on its results when we find in it such proof of inaccuracy and prejudice as the following passage contains: 'In a single case operated on in France by Sédillot, on a child three years of age, there is nothing said about the speech; but the only object of this operation seems to be to disprove that the periosteum alone can in this locality or elsewhere reproduce bone.' In proof of Dr. Whitehead's inaccuracy, we may state that Dr. Sédillot's patient was thirteen years of age, not three," &c.

To be accurate and to be just are the first duties of a reviewer, and in this respect Dr. Bennett's review is open to criticism. He has misquoted some of my remarks, and plainly misrepresented others. He has wrongfully impugned my motives, and assailed the correctness of my statements. His only cited proof of inaccuracy is inaccurate, as may be observed by turning to page 52 of Sédillot's splendid work ("De l'Evidement sous Périosté des Os," Paris, 1867), where can be read near the middle of the page and at the commencement of a paragraph the following words: "Mon malade, âgé de trois ans, a été opéré le 23 Mai."

It would afford me pleasure to translate this case, and to accompany it with extended remarks, as the subject is interesting and important. It would be equally agreeable to know that Dr. Bennett had not sufficiently considered my paper, and that his strictures concerning it were attributable to haste in the preparation of his review. Neither on page 52, nor on the ten succeeding pages relating to the subject of periosteal uranoplasty, can I discover the slightest allusion to the condition of the speech in this case.

Dr. Bennett has mistaken the case of Maria D., aged seven, reported in the *New York Medical Journal* of April, 1869, for another case. The mother of Maria D. Recently told me that her daughter's speech had improved; but it is still bad. I have the satisfaction, however, to know that the patient has been decidedly benefited, and that there *has been reproduction of bone in the transplanted periosteal flaps.*

The case which the reviewer mistakes for that of Maria D. is cited in the *New York Journal* thus: "In the case of my patient mentioned in the analysis, the speech, which before the operation was unintelligible, afterward became distinct and intelligible; but the nasal tone still persists." This case I reported in full in the July number of the *American Journal of the Medical Sciences* of 1868, and the *analysis* referred to I published in the October number of the same journal during the same year.

That Sédillot desired to make his case of periosteal uranoplasty a test of the reproduction of bone by the periosteum is fully proved by the following sentence on page 52 of his work: "J'ai répété à la clinique de Strasbourg cette belle opération, et je ne pouvais trouver une meilleure occasion d'étudier la question tant controversée des régénérations périostiques des os."

Having answered the imputation of alleged inaccuracy, I desire to notice the charge of prejudice. Personally I have no reason to be prejudiced against Dr. Sédillot or against any Frenchman. How far the preferences of my countrymen may be favorable to the French is a matter which I shall not attempt to discuss. Some of the most agreeable years of my life were passed in France, and it is with pleasure that I acknowledged myself Docteur en Médecine de la Faculté de Paris.

I am, Sir, yours respectfully,
W. R. Whitehead, M.D. of New York,
Surgeon of the Northern Dispensary, Member of the Pathological Society, &c.
New York, September 13th, 1869.

◆

THE TASTE OF MEDICINES.

To the Editor of The Lancet.

Sir,—The nauseous taste of many medicines is no slight hindrance and difficulty in the treatment of disease, especially in children, and to this perhaps, as much as anything, it is owing that the homœopathic quackery has found a certain amount of favor with the public. It is not my purpose at present to discuss the opinion now generally entertained, that homœopathy as practised by its founder is extinct, and that under the fiction of infinitesimal dose—"smaller and smaller, and beautifully less,"—an average or rational dose of medicine is administered by his followers; but the fact I deal with here is, that globules and drops, the ordinary homœopathic formulæ, are readily taken, the patient meanwhile pleasing himself with the idea that he cannot be overdosed. The system is, without doubt, "a mockery, a delusion, and a lie;" yet I confess it has suggested to me the thought that it is desirable to administer medicines in as pleasant a form as is compatible with their unimpaired virtues; and with your permission, Mr. Editor, I venture to call the attention of the profession to some suggestions arising out of it under the following heads.

1. Medicines may be administered in diminished bulk by the more frequent use of their active principles, some of which are well known, and their properties ascertained—e.g., morphia, quina, cinchona, atropia, strychnia, salicine, &c., &c.

2. Medicines may be more frequently administered in the form of pill, in preference to that of powder or mixture, which, moreover, may be covered with gold or silver leaf, instead of the sickening powders that are usually employed. Pills are, for the most part, readily taken, and many very nauseous medicines are quite as efficacious in this form as in any other. Dr. Kirby has offered professional men many concentrated and potent medicines, which are well worthy their attention, as they are made into doses which are small in bulk, and tasteless.

3. Several medicines are pleasant to the taste, and some others may be rendered pleasant enough by the addition of syrups, essential oils, aromatic infusions, &c. The ferri carbonas saccharata, the trochisci, the mistura spiritus vini gallici of the British Pharmacopœia, are among the former; infusum rosæ acidum, infusum aurantii comp., infusum caryophilli, infusum gentianæ comp., infusum cascarillæ, syrupus et tinctura aurantii, are instances of the latter. Some drugs and various salts have their taste covered or improved by the bitter infusions, which are by no means disagreeable to some palates—e. g., potassii bromidum, potassii iodidum, et ferri sulphas; but the last-named drug has its taste best covered by infusum aurantii comp. et acidum sulphuricum dilutum, with which it is generally proper to combine it; or the ferri sulphas exsiccata may be given in the form of pill. The tinctura ferri perchloridi—one of our most valuable preparations of iron, but offensively rough and astringent in taste—is rendered an agreeable and elegant dose by the addition of a drachm or a drachm and a half of sherry wine and an equal quantity of syrup, and the wine is medicinal. The antimonium tartaratum is nearly tasteless if mixed with sugar and water; and the taste of potassæ nitras, when dissolved in water, is tolerably covered by syrup of orange-peel. The acids sulphuric, nitric, hydrochloric, &c., may be elegantly administered by means of a graduated glass measure, to which is attached a bent glass tube, the tube indeed forming a part of the measure. The medicine is put into the measure, and passed to the back part of the tongue through the tube, and thus it is

scarcely tasted; and, moreover, the teeth are neither set on edge nor injured. Would it not be desirable to advise some of our more nauseous medicines to be given in a similar manner? For even if we should allow that the base and posterior part of the tongue are equally sensitive with the rest of the organ, yet it is evident that by this means the medicines would come in contact with a smaller tasting area; and it is said that "taste, like touch, is much influenced by the extent of surface acted on."

It would be easy to name many more substances in each of the divisions I have made; but this would needlessly occupy your space. My object has only been to throw out a few hints on the administration of medicines in a more agreeable form. I trust some of your correspondents may be able to point out other methods besides those I have mentioned, by which the taste of medicines may be covered or improved. At some future time, with your permission, I may return to the subject.

I am, Sir, yours obediently,
William Dale.

Plymouth, Devon, Sept. 6th, 1869.

Foreign Gleanings.

ON THE DANGERS ATTENDING UTERINE TRAUMATISM.

M. Saint Vel treats this subject in the *Gazette Hebdomadaire* of Paris of the 16th of July, and cites three cases in which operations, more or less severe, on the neck of the womb were followed by death. One patient was under the care of M. Demarquay, and presented a polypus, much resembling a raspberry, issuing from the os. The growth was removed by forceps, and the patient died in a week of pelvi-peritonitis. The second was under the same surgeon, who removed the hypertrophied neck of the uterus, and the patient died in three days; no autopsy was allowed. The third case relates to a married woman of twenty-eight, presenting a hard and hypertrophied cervix. Incisions were had recourse to, and the patient died, after repeated attacks of hæmorrhage, twelve days after the operation. No autopsy.

INOCULATIONS OF TUBERCULAR MATTER; NEGATIVE RESULTS.

Dr. Dubuisson has communicated to the Academy of Medicine of Paris a paper describing such inoculations, conducted with great care, and under the eye of Dr. Villemin himself. None of the animals presented the least trace of tuberculosis. The results are summed up as follows. The substances which were inoculated remained harmless, nor was the result of the inoculations influenced by the nature of the substances used. The latter may sometimes give rise to sudden symptoms, and kill the animal by a kind of poisoning. Lobular pneumonia was excited in several instances; it should, however, not be mistaken for tubercular deposit. Animals who have eaten tubercular matter have died as poisoned by septic substances. Animals fed upon tubercular lung are made unwell in consequence of this unwholesome diet; but they do not become tubercular. These experiments, therefore, prove that tuberculosis, in its essence, is neither virulent nor contagious, so far, at least, as the animals which were the subjects of experiment are concerned.

LARGE INGESTION OF CROTON OIL BY A LITTLE GIRL; RECOVERY.

Dr. Mauvezin relates, in the *Gazette des Hôpitaux* of June 29th, the case of a little girl, six years old, who, by mistake, swallowed forty-five drops of croton oil in some coffee and milk. She complained of the horrid taste of the drug, and a burning sensation at the isthmus faucium immediately after the ingestion. A little time afterwards there was great pain at the epigastrium, with severe vomiting, which lasted three quarters of an hour. After the vomiting had ceased, the patient slept for four hours; and on awaking she said she was hungry, when some soup was given her. The child was then free from all pain, had two loose stools, and made a good recovery. Dr. Mauvezin is puzzled to explain this favorable result, and states that the oil was, on trial, found of good quality, and readily excited pustulation by friction.

HEMERALOPIA.

Dr. Coindet, a distinguished surgeon in the French army, writes to the *Gazette Hebdomadaire* of July 23d concerning this complaint, and states that he has obtained excellent results by cauterising around the periphery of the cornea, without touching the latter, with a finely-pointed piece of lunar caustic. It should be done by cauterising each fourth of the periphery successively.

News Items, Medical Facts, &c.

Sanitary Matters at the Isthmus of Suez.—M. de Lesseps alludes, in his report, to the sanitary state of the men employed on the canal works; and states that, in 1859, the population consisted of 25 Europeans and 125 natives; in 1868, there were 16,010 Europeans and 18,248 natives; whilst now, in 1869, there are no less than 22,843 Europeans and 19,557 natives. It is curious to note how the number of Europeans increases with a diminution of the works. The mortality, excluding the cholera year, remained at about one per cent., whilst it is 2·40 per cent. in France. It is sad to relate that out of the eleven medical men who have been employed since the beginning of the undertaking, six have perished: four of them died in 1869.

Irish Lunatics.—From the return issued it appears that the number of dangerous lunatics confined in district asylums in Ireland on the 30th June, 1869, was 2380; and in private asylums, 65. The numbers of idiots and epileptic patients respectively in district asylums were 146 and 446; and in private asylums 35 and 32. We have thus a total of 3104 lunatic persons who are under restraint in Ireland.

The students in the Liverpool School of Medicine have presented Dr. F. T. Roberts, Demonstrator of Anatomy and Lecturer on Botany to the school, with a powerful microscope and an illuminated address, in token of their high esteem, on the occasion of his leaving Liverpool to take the appointment of Demonstrator of Anatomy in University College, London.

A Lincolnshire mother lately administered four drops of laudanum in some sugar and water to a child five weeks old, for the relief of pain and disorder of the stomach. The child died next morning from the effects of the dose.

According to advices from the West Indies yellow fever is decreasing. A few cases continue to occur in Martinique and Gaudaloupe, but the disease had nearly lost its epidemic character.

The death of a child has occurred, in Northumberland, from eating the water hemlock.

PRINTED AND PUBLISHED BY
Wm. C. HERALD, Agent, 131 WILLIAM ST., NEW YORK.

THE LANCET.

A Journal of British and Foreign Medicine, Physiology, Surgery, Chemistry, Criticism, Literature, and News.

JAMES G. WAKLEY, M.D., M.R.C.S., EDITOR.

PUBLISHED MONTHLY.

No. 12. NEW YORK, DECEMBER, 1869.

Clinical Lectures

ON

DISEASES OF THE CHEST.

Delivered at Charing-cross Hospital.

By Hyde Salter, M.D., F.R.S.,

Fellow of the Royal College of Physicians, Physician to Charing-cross Hospital, and Lecturer on The Principles and Practice of Medicine at its Medical School.

LECTURE III.

ON RETROSPECTIVE PHYSICAL DIAGNOSIS.

Gentlemen,—The subject of my lecture to-day is a case which, in some of its bearings, is exceptional. In the majority of cases we are called upon to say what is the matter with a patient from present signs—we are called upon to interpret the present state by the present evidences of that state. But in some cases we have to interpret the *past* state by present signs; and we have to say, not what *is* the matter, but what *has* been. In these cases the primary active disease has passed away, and we are left only, as that which is to guide us in our inquiry, with its results; we have only its vestiges and legacy to deal with in our investigation into its original nature.

The case that I have to speak of to-day is one of this class. The patient has been the subject of severe and acute disease; and this disease, which dates from four months ago, has left behind it extensive organic ravages, but the acute stage has entirely and long since passed away, and we have to deal with those injuries which the disease, when in its acute stage, inflicted on the body; and taking these as the materials with which we have to work, and from which we have to draw our inferences, we have to cast our attention backwards, and to ask ourselves what diseased process would have resulted, after such a lapse of time, in such a state of things as exists at the present moment.

But while I say that we have to deal, in these cases, with past disease, I do not mean to say that the present condition is not a subject of interest, and that we are not bound to consider it for its own sake; for, both in a pathological view in relation to interest, and in a therapeutical view in relation to treatment, these legacies of antecedent diseased processes often include that which is of very great interest and importance to us. But I mean especially that in relation to diagnosis—to saying what the disease has been in these cases, and under what class we must put them,—we have to deal with existing signs as a means of interpretation of that which has long since ceased to exist.

These cases are often beset with great difficulty. In the first place, as already mentioned, you have to pronounce as to that which *has* been from that which is only now under observation. In the second place, while the physical conditions of health are precise—while, if you examine the voice, the respiration, the beating of the heart, and the other physical evidences of the natural state of the organs, you find them definite and uniform—the morbid states, on the other hand, that are left by previous active disease, are confused and undefined. Then, again, there may have been more than one disease at work; several diseased processes may have been in operation, and these may have left complex states behind them; and these different results may be self-contradictory and mutually confounding, so that it is often difficult to say exactly what, and how many, diseased processes have been in action, which, if you could only have watched them at the time, you would have been perfectly clear about. And then come in the processes of repair; and these, by bringing back the state of things from one of disease towards one of health, add to the difficulty already existing. Then, lastly, there is the vagueness of the patient himself, in the narrative he gives you of what he has gone through—a vagueness partly due to ignorance and uneducated powers of observation, and partly to the patient's not having been capable, in the acute stage of his disease, of making or remembering any accurate observations; and the longer the time which has elapsed since the attack, the more vague is the account which he gives.

But while it is unsatisfactory, in one sense, to find these cases obscure, yet their very obscurity stimulates our scrutiny, imparting to them an additional interest, and tending to make us more inquisitive, more prying, more curious, to find out what has been, and is, the actual state of the case.

I shall first direct your attention to the physical examination of this case; I shall do so in perfect disregard of the previous history, or of anything having to do with it, except the physical signs, because I want to see how much evidence we can get out of the physical signs alone, how far these will enable us to come to a definite conclusion—how much ground, in the way of diagnosis, the physical signs will cover.

The patient, Walter W——, a boy aged fourteen, is a good example of the value of the concurrent testimony afforded by the different senses. When you listen to the chest you have the testimony of one sense—hearing, and that is the sense most commonly, and often exclusively, relied upon in our examination of cases of thoracic disease. But other senses are of great service in confirming what we hear, and in making all the signs converge to a verdict. In this boy, sight, touch, hearing, all may be advantageously called into use.

First with regard to *Sight.* The first thing that will strike you in looking at the patient is, that while one side is in active respiratory movement, the other, the left side, is perfectly stationary. If you look at him, and see this process going on, the effect is very striking and curious; and it is so because it is something we are unaccustomed to. We see a man bowling with one arm or writing with one hand, but we don't usually see a man breathing with one lung. It is as though one half of the boy were a living body, and the other half a statue. And you will see, too, an *exaggerated* movement on the healthy side; you will see that when the boy has made the ordinary respiratory movement on his breathing side—the right,—and is then told to breathe deeply, his right shoulder goes almost up to his ear. In short, he performs the ordinary movements of inspiration, and then those more violent movements characteristic of extraordinary respiration. It is very singular that there should be this perfect immobility of the shoulder on the diseased side—that the muscles should not make the slightest attempt to move it. It seems like an example of that apparently instinctive consciousness (of which we sometimes see other signs) of the existence of disease within the body; as though the body itself were aware of the presence of a diseased state, and did not attempt to make efforts which, under the circumstances, would be useless. On that side of the chest which is capable of following the expansive action of the respiratory muscles you see this exaggerated movement; while, on the other, where the lung is so diseased that the enlargement of the chest would be impossible or useless, you get no movement whatever. But while you would think that the muscles would at least make *some* effort to get air into the chest, you find they make no effort at all—they seem to give it up as a bad job. The boy is perfectly unconscious that the two sides of his chest are in such a different state; yet, when you tell him to breathe deeply, up goes the shoulder on one side half-way to the ear, while, on the other side, it remains as stationary as if it were dead.

We see the same thing illustrated in different diseases of the chest in which violent respiratory effort would be attended with different results. In those thoracic diseases in which violent respiration would be of service—in which the state of things is such as extraordinary respiratory action would tend to correct—we see such efforts made; as in those cases where the difficulty affects the air-supply, and the demand for additional air is great. But if the state of things is such as violent respiratory efforts would not improve, such efforts are not made. Suppose a man has his lungs consolidated by pneumonia, no additional effort would get air into them, and therefore you do not get any additional effort. But if a man has his bronchial tubes constricted by asthma, then violent effort may make up, by the rapidity of the in-draught of air to which it gives rise, for the narrowness of the stream—rate may make up for volume; and you see the patient laboring for his breath with a convulsive violence that causes streams of perspiration to pour down his face. This is another example of a kind of instinctive consciousness as to whether violent respiratory efforts will be useful or not.

The next thing that would strike us with regard to this boy is that the two sides of the chest are neither the same shape nor the same size. If you strip him and look at him in front, you find that while on the right side you have the ordinary shape, on the left the upper part of the chest is so flattened as to be almost concave; below that, one inch and three-quarters below the nipple, a distinct prominence is seen; and below that the chest again falls in. If you look at the back, you see that on the left side, instead of the ribs being rounded out as on the sound side, they are flat and fall in, and hang down from the spine at a much more acute angle. You see, too, that while on the right side the intercostal spaces are drawn in, and become conspicuously visible, at each inspiration, on the left no such appearance is shown; you have a plain surface, and cannot tell which are spaces and which are ribs.

The third thing that would attract your attention would be the curvature of the spine. This often occurs in these cases—a lateral curvature in the dorsal region; but in this instance it is the reverse of what is ordinarily described, the convexity of the curvature being directed towards the side that has fallen in, and not the concavity.

The fourth thing to be noticed is, that the heart is seen beating in the second, third, fourth, and slightly in the fifth intercostal spaces on the right side; but not at all on the left, in its ordinary situation. You have the heart plainly displaced toward the right.

These are things that would strike you on making a mere inspection of the chest. Now let us take the sense of *Touch.* What evidence will that give us?

On stripping the boy, you will see that about the sixth rib, a little below the nipple on the left side, there is a prominence of a conical shape; and on manipulating this prominence, there is at one part of it, to my mind, a distinct sense of fluctuation. The other thing of which touch gives you evidence is that vocal fremitus—that natural thrill of the chest-wall that accompanies the voice—is extremely feeble in the lower part of the left side of the chest. These are the two points you get from Touch.

Now, we have to consider the Auscultatory signs. With regard to these, you know you may get certain signs by applying the ear to the chest, and you may get certain other signs by striking the chest and listening with the unaided ear to the sound so produced. Take first these last—the sounds elicited by Percussion. On the right side percussion is clear; on the left, the diseased side, we find that in the upper part of the chest, corresponding to the first three ribs, we get perfect resonance; and below that, absolute dulness and flatness; while behind, as high as the supra-spinous fossa, the percussion-note is perfectly dull. On applying the stethoscope, we find that on the right side the respiratory murmur is loud and clear, which shows that the whole of that side is in a sound state. But not only is the murmur clear and well marked, but *exaggerated;* we get what is called *compensatory* breathing. Now, what does this show? It shows that while the lung is healthy at the part you are listening to, there is some other part in which it is not healthy; it shows that the lung is not only doing its own work, but its own and that of some other part too. I would impress upon you strongly the importance of attention to this compensatory breathing, which, although in itself a healthy sign, is yet one that points with the greatest certainty to disease elsewhere. It says, to the accustomed ear, as plainly as possible: "There is something wrong somewhere, but not here; examine some other part of the chest." Wherever you find this compensatory or puerile breathing, do not rest content till you have explored the whole thoracic superficies.

On the right side, then, you get this compensatory breathing everywhere. But when you pass over to the left side, you find that while in the upper part of the chest in front the respiratory murmur is clear and well marked, showing that the lung there is healthy, as soon as you descend to the third rib, you hear the sound called tubular or bronchial breathing, showing that the lung-substance is condensed, and thus becoming a better conductor of sonorous vibrations than natural, conveys to the ear that blowing sound which always, even in health, takes place in the bronchial tubes at every in-rush and out-rush of the air, but which is ordinarily inaudible from the bad conducting power of healthy lung. Below that point no respiratory sound whatever is heard.

I have told you, so far, nothing about the previous history of the case; I have confined myself purposely to physical signs. Now could you, on the strength of these physical signs alone, tell anything that has happened to this boy? Let us take these signs in outline. One of the most striking things is that the mischief is entirely lateral; while you have extensive ravages involving the greater part of the left lung, the right is perfectly healthy. The second point is the falling-in of the diseased side, and the absence of movement in it. The third point is the distribution of the physical signs on the affected side; while in front you have resonant percussion as low as the third rib, behind you have dulness extending up to the supra-spinous fossa—a dulness, therefore, extending much higher behind than in front. Now we will take these three points—the unilateral character of the disease, the falling in of the left side and its immobility, and the evidences of condensation running higher behind than in front,—and ask ourselves whether there can be any reasonable doubt in the mind of any experienced observer of disease as to their cause. If you were to ask twenty physicians, you would only get one answer from them all. They would all say: "This boy has had some fluid poured out into his left pleural cavity, which has exercised compression on the lung so long that, when afterwards removed by absorption, the lung was so carnified, and had become so fixed in that unnatural condition by adhesions, plastic coating, or otherwise, that it was unable to resume its original volume; and since the lung, on the removal of the fluid, could not enlarge itself to the original size of the chest, the chest was obliged to contract itself to the reduced size of the lung."

With regard to the inevitable conclusion, that the falling-in of the chest must depend on the pressure of the lung by fluid which has become absorbed, let me mention two facts. Some persons think that without pleurisy or effusion the lung may contract; that if it has become hepatised it will undergo a certain reduction of volume. You know it is a law of inflammatory exudation that it should undergo a slow and gradual contraction; hence we have puckered cicatrices, stricture of the œsophagus and urethra from the contraction of circumfused fibrine, the valves of the heart tied down by contracted cordæ tendineæ, &c. Now in hepatised lung you have its parenchyma full of inflammatory exudation, and some observers say that this may so contract as to produce an appreciable diminution of the size of the chest on the affected side. I will not decide the question whether lung simply hepatised can contract to any degree, or whether it never does; but this I will say, that it has never occured to me to observe contraction of it to any considerable extent, and that such an amount of contraction as we see in the case before us is utterly beyond what could be explained by the fact that the boy's left lung has been hepatised. Again, the chest may fall in, without effusion, from the formation of a cavity in the lung itself; and, indeed, falling-in of the chest on the diseased side is, as you know, a common sign of the existence of a cavity. But in this case we cannot entertain this explanation, because the chest has fallen in at a part where there is no evidence of cavity, and the falling-in is too universal to be caused by localised excavation. A cavity adequate to explain so general a falling-in of the side should involve almost the entire lung; the left lung should be one great cavity. These two sources of contraction, therefore, may be cast aside; and nothing remains to explain to us why the chest should have so fallen in except the prior existence of pleuritic effusion.

A very material point in determining whether pleuritic effusion has existed in this case, or whether extensive pulmonary abscess, with hepatisation, would be sufficient to account for all the physical conditions which we at present find, is the evidence of the heart having been thrust over to the right side. We see it beating in the righ second, third, and fourth intercostal spaces, even now, when, so far from there being any distension of the left side, that side has shrunk into less than its normal dimensions. It is evident that a cause of such displacement must have existed, although at the present time no such cause exists; and there can be no doubt that at the time that such a cause was in operation the heart must have been more displaced to the right than it is now. Could any extent of pulmonary abscess produce such a displacement? I think it impossible. I have never seen a case, or heard of a case, in which pulmonary abscess produced any appreciable effect on the position of the heart. And I should regard this single fact of the heart's displacement to the right as in itself sufficient and conclusive proof that extensive effusion has existed in the left pleural cavity.

Can we now say that the physical signs presented by this case point to the previous existence of hydrothorax, and to nothing more? Would the hypothesis of hydrothorax cover everything, and leave nothing unexplained? No. One unexplained fact, the prominence below the left nipple, would still remain. The fluid, having been absorbed, would not leave behind it any localised tendency to pointing. This prominence in the boy's chest is actually tender; there is pain, tenderness, redness, and swelling; now this is something that the previous existence of hydrothorax will not explain. And then, again, the boy spits pus profusely; when in my room this morning, while I was taking some notes of his case, he spat incessantly large quantities of pure pus. Now if the disease had been nothing more than pleurisy issuing in hydrothorax it would not leave, four months after its occurrence, profuse purulent expectoration. The recent existence of effusion into the pleura is certain, but that there has been something more is equally certain; the purulent expectoration and the appearance of imminent pointing in the situation I have referred to are conditions that the hypothesis of effusion will not cover. What hypothesis, then, would cover them?

Well, I believe the boy had acute inflammation of the lung at the same time that he had the pleuritic effusion; that it was a case, not of simple pleurisy, but of pleuro-pneumonia; and that the pneumonic inflammation was such as to issue in abscess of the lung—that the inflammation went on to suppuration. I believe he has now a collection of matter about the centre of his left lung, near its anterior surface, from which he is spitting up this pus; and I think the prominence below the nipple indicates the place where the abscess has a tendency to point.

But you might ask me—"Why, since that to which the physical signs point is the recent existence of fluid pressure, and not what particular kind of fluid it was that exercised the pressure,—why may not that fluid have been pus, why may not the case have been one of empyema, and why may not the matter finding its way into the air-passages, and showing a tendency to escape by pointing, be free in the pleural cavity? Why suppose that it is from the *lung* that the pus is escaping in one way, and endeavoring to escape in another? Why, in fact, believe that pneumonia has existed at all?" Because, in the first place, we have evidence here that the fluid which occupied the pleural cavity has been removed; the accumulation sufficient to produce such lung collapse as we see here, and such displacement of the heart to the right, must have been considerable, and the distension proportionate; but the left side, so far from being distended, presents an example of extreme collapse. Now, I am very sceptical as to the pus of empyema being ever absorbed. In the second place, even if the pus could have been removed by absorption, or by breaking into the lung and expectoration, it would not be after its almost complete evacuation that it would point externally; if it had been going to point at all, it would not have waited till now, it would have done so at the time of its maximum tension. In the third place, if the pus expectorated was from the pleural cavity, we should have pneumo-pyothorax; if the pleural cavity communicated with the air-tubes, the air-tubes would communicate with the pleural cavity; and if pus could get into the one, air could get into the other. That is, in fact, what does occur in broncho-pleural fistula. Now, here we have nothing of the kind.

The only tenable hypothesis compatible with the extra-pulmonary seat of the abscess now threatening to burst, would be, that while the effusion elsewhere was serous, the inflammation of the pleura at this point was, or has become, suppurative, and that pus has been effused here hemmed in on all sides by adhesions; in other words, that we have what may be called circumscribed pleural abscess—an hypothesis, in my opinion, much more farfetched and complex than the one I have suggested, and less consistent with the long-standing abundant expectoration of pus.

Having formed our diagnosis entirely on the ground of physical signs, I may now tell you that the previous history of the case was simply that of an acute attack on the left side of the chest coming on about four months ago—fever, pain in the left side and inability to lie on it, dyspnœa, cough, expectoration, and dorsal raised decubitus. The expectoration suddenly became profuse and purulent about a month ago, and I think it extremely probable that it was then that the pus which he has since been spitting first found its way into the air-passages.

And now perhaps you will be inclined to ask me why I have gone through all the points of this case with such a tedious minuteness, detaining you even with some considerations that are the very A B C of physical diagnosis. I have done so purposely. I have done so as a sort of exercise for you, to put you as it were through a kind of drill, and to show you the kind of mental process through which you must put yourselves in the investigation of such cases. I am anxious that you should get what may be called "the retrospective instinct;" that wonderful faculty that enables the palæontologist to tell you the structure and food and habits of some extinct animal from a glance at one of its bones. Such a faculty, ready and easy and almost instinctive as it ultimately appears to become, is only to be acquired by long and patient exercise of the combined powers of reason and observation, based on the knowledge of ascertained laws. The laws on which *your* reasoning and observation must be based are the laws of disease, which are just as certain and precise as the laws of zoological structure; and if you would acquire this retrospective instinct on subjects medical, you must make it the daily work of your lives to go through just such a mental process as is sketched out in this lecture.

◆

Clinical Lectures

DELIVERED AT

THE ROYAL LONDON OPTHALMIC HOSPITAL, MOORFIELDS,

By J. SOELBERG WELLS,

Professor of Ophthalmology in King's College, Opthalmic Surgeon to King's College Hospital, and Assistant-Surgeon to the Royal London Opthalmic Hospital.

LECTURE II.

IRITIS.

GENTLEMEN,—Although we may distinguish four different forms of iritis—namely, the simple, the serous, the parenchymatous, and the syphilitic,—there are certain symptoms more or less common to all of them. Thus, there is generally some conjunctival and subconjunctival injection, the latter giving rise to the rosy zone of small parallel vessels round the cornea. The eyelids are perhaps swollen, red, and puffy; and there may be a considerable amount of serous chemosis surrounding the cornea. The degree of photophobia and lachrymation is very variable. The same is the case with the pain, which especially at the outset, may be but slight, but is more frequently severe, assuming a sharp lancinating character, being situated deep in the eye, and extending thence to the forehead and side of the nose (ciliary neuralgia); indeed there is often great neuralgia of the branches of the fifth nerve. In pure, uncomplicated iritis, the eyeball is but slightly sensitive to the touch; hence, if sharp pain is caused when the ciliary region is pressed by the tip of the finger, it is always a sign of the coexistence of inflammation of the ciliary body (cyclitis). The iris is somewhat dull, lack-lustre, and discolored, which is partly due to hyperæmia and partly to an effusion into its structure; on account of this effusion and the hypertrophy of the connective tissue, the fibrillæ of the iris are also indistinct and blurred. The pupil is generally sluggish and contracted. Its edge is perhaps irregular, and tied down by small beads of lymph to the anterior capsule, these adhesions being termed "posterior synechiæ." They may exist only at certain points, or may occupy the whole circumference of the pupil, leaving its area clear. This is called "annular," or "circular" synechia, or "exclusion" of the pupil. Generally, however, there is some lymph effused into the area of the pupil: this may be only a thin film; or a thick, firm nodule may completely block up the pupil, when it is termed "occlusion of the pupil. But the effusion is not always confined to the area and margin of the pupil, but may extend back along the posterior surface of the iris, glueing this firmly to the capsule. It is important to remember this fact in performing iridectomy for iritis or irido-choroiditis. The lymph may also occupy the surface of the iris, covering it like a thin film, or appearing in the form of small nodules or buttons: it often mixes with the aqueous humor, rendering this turbid; or it sinks down to the bottom of the anterior chamber as an hypopyon; or, again, it may become precipitated on the posterior surface of the cornea, and give rise to small punctated opacities. The sight is more or less impaired, which may be due to cloudiness of the cornea, of the aqueous humor, or of the area of the pupil. But if it is greatly deteriorated and these parts are tolerably clear, we must suspect the coexistence of an inflammation of the ciliary body or choroid, accompanied by opacity of the vitreous humor, &c. In pure iritis the eye-tension and the field of vision are normal, although the latter may be perhaps somewhat contracted on account of the smallness of the pupil and the synechiæ.

The first patient, B. W——, aged thirty-four, presents in his left eye the symptoms of *simple recurrent iritis*. The inflammatory symptoms are but very slight; the lids are normal, there is but a faint conjunctival and subconjunctival injection, but very little photophobia, and no pain or lachrymation. He reads No. 1 of Jaeger. On close inspection, we notice that the iris is slightly discolored, and the pupil partially occupied by a thin film of lymph; but, on the application of atropine, it dilates very irregularly, and several firm and tolerably broad synechiæ spring into view. The eye tension and the field of vision are perfectly normal. He had an attack of iritis in this eye in 1863; but was quite free from it till about a fortnight ago, when he caught cold, and the present inflammation supervened. The treatment indicated is the instillation of a strong solution of atropine, in the hopes of tearing through some of the adhesions; but if considerable synechiæ remain, and the disease shows a disposition to recur, I should strongly advise an iridectomy.

Serous iritis is chiefly distinguished by the tendency to hypersecretion of the aqueous humor and the deposition of particles of lymph on the posterior surface of the cornea, perhaps in a circular group opposite the pupil, or in the form of a pyramid, the base being formed by the larger nodules, which gravitate downwards. The aqueous humor is generally somewhat turbid, this varying often considerably in the course of a few hours. The posterior synechiæ are, as a rule, but few in number, and not very firm or broad. The anterior chamber is increased in depth, and the pupil is often somewhat dilated, which is due to an increase in the intraocular tension. The degree of the latter should therefore be frequently examined; for this serous inflammation shows a tendency to extend to the ciliary body and choroid, which is accompanied by hypersecretion and cloudiness of the vitreous humor, increase in the eye-tension, great diminution of sight, and contraction of the visual field. The symptoms of serous irido-choroiditis are well shown in the next patient.

H. D——, aged fifteen. His eyes have been affected for some months; and you observe in both that the anterior chamber is rather deep, the aqueous humor somewhat clouded, and numerous punctated opacities are strewn over the posterior surface of the cornea, and arranged somewhat pyramidally. A few posterior synechiæ existed in the right eye, but they have yielded to atropine; and this pupil is circular. In the left eye some synechiæ are still remaining. So far the disease shows only the symptoms of serous iritis; but, on further examination, we find that the vitreous humor is somewhat hazy, showing both floating and fixed opacities. At one time these were very considerable, and caused great impairment of vision; but the vitreous has lately cleared very much, and the sight has improved correspondingly. Although the eye-tension has been somewhat increased, especially in the left eye, this was not considerable; and as the deterioration of sight corresponded to the cloudiness of the media, and the visual field remained good, there was no call for operative interference. The sight is now so good that he can read (with the aid of a convex lens to neutralise the effect of the atropine) words of No. 1 with the left eye, and of No. 2 with the right. The boy is delicate, and somewhat strumous; but there is no trace of hereditary syphilis. The treatment has consisted in the continued use of atropine, an occasional blister behind the ears, and the administration of quinine and steel, together with a generous diet.

Parenchymatous or suppurative iritis is principally characterised by a plastic exudation into the parenchyma of the iris, as well as at the edge of the pupil and in its area. The fibrillæ of the iris become much thickened and swollen, its anterior surface hazy and indistinct, which is due to the effusion of lymph, which may appear only as a thin veil or assume a more purulent character, little yellow nodules (which must not, however, be mistaken for syphilitic buttons) being strewn about on the surface of the iris. The aqueous humor becomes turbid from the admixture of lymph and pus, which may sink down and produce hypopyon. The posterior synechiæ are broad and firm, and the pupil is often blocked up by a thick nodule of lymph. From the great impediment in the circulation of the iris, numerous dilated veins may be observed on its surface. Suppurative iritis is not unfrequently accompanied by a similar inflammation of the ciliary body and choroid.

Syphilitic iritis generally assumes a suppurative character, and is, moreover, specially characterised by two peculiarities—viz., the often somewhat partial character of the inflammation, and the appearance of tuberculous nodules or condylomata (gummy tubercles of Virchow) scattered about singly over a part or the whole of the iris. They are imbedded deeply in the parenchyma, being developed from the connective tissue. As they increase in size, they push aside the fibrillæ, and sprout further and further into the anterior chamber. Although the presence of these tubercles may be taken as a sure indication of the syphilitic origin of the iritis, you must remember that iritis due to syphilis very frequently does not assume this character, but appears in the simple or parenchymatous form. This has occurred in the third patient, in whom the iritis, which was due to syphilis, showed itself only as a tolerably mild form of parenchymatous iritis.

Amongst the various causes of iritis must be especially mentioned rheumatism; exposure to cold winds, damp, &c.; syphilis; and wounds and injuries of the eye. Traumatic iritis often assumes the parenchymatous or suppurative form, and occasionally the serous. Iritis may also supervene secondarily upon an inflammation of other tissues of the eye.

With regard to the treatment, I would strongly insist upon the extreme importance of widely dilating the pupil by atropine as soon as possible. Thus the chief danger—the formation of thick, firm, posterior synechiæ—is obviated; for these synechiæ are the most fruitful source of obstinate recurrent iritis, and are often also the cause of the extension of the inflammation to the ciliary body and choroid. Moreover, the dilatation affords rest to the inflamed muscular tissue of the iris; the tension and congestion of the eye are diminished, and the ciliary neuralgia relieved. In a healthy eye an extremely weak solution of atropine will suffice to produce wide dilatation; but in iritis a strong solution (four grains to the ounce) is necessary; for, on account of the inflammatory swelling of the tissue of the iris, and of the effusion of lymph amongst its fibrillæ, great resistance is offered to the action of the atropine. I generally direct the patient to apply the strong solution at an interval of five minutes for half an hour at a time, to be repeated two or three times daily, until wide dilatation is obtained, or the effect is negative. But sometimes no effect is produced until the inflamtory irritation and eye-tension have been relieved by leeches or paracentesis. If the pupil is tied down by firm, unyielding synechiæ, atropine should be only used in moderation, for the purpose of soothing the eye. Should it subsequently cause irritation or conjunctivitis, a mild astringent or belladonna collyrium (extract of belladonna, half a drachm, to two ounces of distilled water) should be substituted. If the ciliary neuralgia is severe, leeches should be applied to the temple, and hot poppy or laudanum fomentations to the eye; and if the pain does not yield, a subcutaneous injection of morphia should be administered. Mercury need only be given if there is a very considerable exudation of lymph at the edge of the pupil, on the surface of the iris, or into the anterior chamber; or if there is a syphilitic taint, and the disease assumes a specific character. I prefer inunction to the administration of mercury by the mouth, and generally prescribe from half a drachm to a drachm of the mercurial ointment, to be rubbed in two or three times daily. The constant application of hot-water compresses to the eye often causes rapid absorption of the tubercles in the iris and of an hypopyon; but as they have to be continued without intermission day and night, few patients can or will submit to the trouble and inconvenience. In obstinate syphilitic iritis great benefit is also experienced from the administration of large doses of iodide of potassium. If the hypopyon is considerable, paracentesis must be performed, and, if necessary, repeated perhaps several times. But if the iritis is very severe and obstinate, resisting all remedies, more especially if there are firm and extensive synechiæ, if the pupil is occluded, or the tension markedly increased, it is best to perform iridectomy at once, for this often affords the most striking benefit. In serous iritis the free action of the skin and kidneys should be maintained, atropine should be applied, together with a suppurating blister behind the ear. If symptoms of a glaucomatous nature supervene, paracentesis may be tried; but if it does not suffice, no time must be lost in performing iridectomy. In rheumatic iritis, the administration of the oil of turpentine, as first recommended by Dr. Carmichael, often proves very efficacious, although it is apt to produce derangement of the stomach.

◆

Clinical Lecture

ON A CASE OF

STRICTURE, WITH ABSCESS IN PERINEO.

By JOHN ADAMS, F.R.C.S.,

Surgeon to the London Hospital.

GENTLEMAN,—I have just opened an abscess in perineo in a case of stricture, and I now direct your attention to the case as representing the type of such cases which are of everyday occurence. Not a week passes but two or more cases of retention of urine are brought to this hospital. These are of various kinds; but many are dependent on stricture of the urethra. Perineal abscesses are very frequently consequent on such cases; but they often arise where there has been no decided retention, and they occur in the following manner, at least I suspect that the following is the mode in which they occur. A patient is the subject of a bad stricture, which he neglects. Of course the urine is forcibly driven through the urethra by the muscular coat of the bladder, which is greatly hypertrophied. This is attended with a dilatation of the urethra just behind the stricture, and this dilated portion giving way, a small quantity of urine escapes, and abscess is the consequence. Or it may be that ulceration of the urethra occurs as a consequence of inflammation, and thus a small abscess being formed, this communicates of necessity with the urethra. Under these circumstances the urine is forced more and more into the perineum, and thus distends this part, and makes its way in that direction, where there is least resistance. Thus, your anatomy shows you that the *deep layer of the superficial fascia* adheres with such tenacity to the rami of the ischia and pubes as to prevent the urine from passing down the thighs. It does not pass around the anus, because the same layer of fascia unites with the anterior layer of the deep perineal fascia. The urine, therefore, passes forwards into the scrotum and penis, and occasionally as high as the hypogastric region of the abdomen. The treatment of such a case is well known to you. A free and early incision affords the only chance of relief to the patient; and if this is neglected, the scrotum and skin of the penis will slough, and death may occur. There must be no hesitation in this case, no dissection of parts to reach the extravasation gradually. No! You must at once thrust a pointed scalpel into the perineum, and give exit to the fluid, whether pus or urine, or both. I regret to say that such a line of practice is often neglected; and a very considerable share of a surgeon's practice consists in the treatment of such cases, possibly altogether misunderstood.

In cases of extravasation of urine occuring with abscess, it is very proper to pass a catheter, and a small elastic catheter is the instrument appropriate to such cases. But this often cannot be passed into the bladder; nevertheless, the urine will now escape by your opening, and you will possibly get a fistula in perineo, which you will treat *secundum artem;* or the perineum may entirely close up, and even the stricture may for a time be altogether lost sight of. But you ought not to allow your patient to lull himself into a state of fancied security. *Once a stricture always a stricture* is an axiom which ought to be always in the surgeon's mind, and which he ought to impress upon his patient.

The case before us is one of great interest, and aptly illustrates the early progress of cases I have alluded to; and is one where all the mischief I have described as the result of ulceration of the urethra and abscess has been prevented. It is plainly this:—The man came to the hospital with retention of urine, and the house-surgeon relieved him with a small catheter. The instrument was tied in, and was replaced in a few days by a larger catheter. In the progress of the case, however, an attack of inflammation supervened, accompanied with fever, and a tense swelling occured in the perineum. The swelling extended upwards as far as the root of the penis, and the anterior part of the scrotum, where it joins the skin of the penis, was also swollen and tense. The urine had been freely passed with pain, and a sense of scalding. I passed a *small elastic catheter;* and, when it reached the swelling, some flocculi of inspissated pus escaped, mixed with blood. I still continued to push forward the catheter, which readily entered the bladder, and I drew off the remaining urine. But I did not stop here; I freely thrust a pointed scalpel into the tense perineum, and some healthy pus (if any pus can be said to be healthy) escaped. I tied the catheter in; and the house-surgeon has ever since attended to the case. The perineum is closing up, no urine having escaped through the wound. Had I acted differently, the urine must have become extravasated, and the usual category of symptoms would have succeeded. The catheter is changed about every third day, and there is no difficulty in passing one gradually increased in size. Elastic catheters are best adapted for cases like these; they find their own way if used with little force, and are readily insinuated through the urethra, rendered devious and irregular by the projection of abscesses and by ulceration.

I will now direct your attention to a class of cases by no means unfrequent, and which well exemplify what may be termed the early stage of the disease now under consideration, but in which retention of urine, ulceration of the urethra, and abscess in perineo may be prevented by suitable treatment. I will illustrate this subject by a case, and such cases are very common.

I was requested to see a gentleman who had retention of urine, the result of stricture in front of the bulb of the urethra. Ulceration had no doubt occurred, and abscess had formed just in front of the scrotum. I opened this, and passed an elastic catheter and tied it in; he soon got well. I lost sight of him for some years, when he sent for me in consequence of a swelling in the same situation, and great swelling of the scrotum, with pain and difficulty in passing his urine, without absolute retention. I did not doubt that ulceration of the urethra and abscess were about to ensue as before, but I thought I might anticipate, or rather prevent this, by the introduction of a catheter. I therefore passed a small elastic instrument into the bladder, and tied it in, and directed the patient to remove the stylet and draw his water off through the catheter three or four times daily. In three days I passed a larger instrument, and tied it in, still giving him the same direction as to the drawing off his urine. I changed the catheter again from time to time, with similar directions to the patient, and after three or four weeks the swelling had entirely disappeared, and he was so far cured—that is, he could pass his urine so well that he only came to me at long intervals, and after a few months ceased altogether to attend. You may ask, Was this patient cured? No: but he thought he was, and thought he knew better than his surgeon, for I told him that he ought to consider himself always the subject of stricture, and advised him to have a catheter passed occasionally; but very few patients will do this, and this gentleman is now under my care with a bad lengthened stricture, which I relieve by passing occasionally a catgut bougie. I could mention many cases of this description, and I dare say they very often occur to surgeons; but I would give you this advice: always use a small elastic catheter in such cases, and do not be too solicitous to pass a large instrument. Much error exists on this subject. One is apt to think that the larger the instrument the greater the chance of cure. I do not think so; indeed, I am sure that in the cases now under consideration the reverse holds good, and that moderately sized instruments are more suitable to the generality of urethras. I cannot assure you that the pathology of such cases, as I have described it, is in all cases the same. I suspect in some there is very trifling ulceration of the urethra, probably commencing in inflammation of a lacuna; but I can scarcely believe that abscess, however small, invariably accompanies this, or that any extravasation of urine happens, because there is no evidence of one or the other, and the swelling wholly subsides, without any escape of pus or urine, so far as I can judge; though I may be wrong. But wherever in a tense swelling you can distinguish fluctuation by careful manipulation, it is certainly your duty to puncture the swelling, as you may be quite certain that an abscess has formed, and that the matter must be allowed to escape. If, however, you allow your patient to pass his urine through the urethra where such swelling as I have described exists, you may be quite sure that ulceration and abscess will occur, and that the urine will become extravasated. I would remind you that the retention of a moderate-sized elastic catheter in the bladder can do no harm; whereas, if you allow the urine to pass through the urethra, now perforated by ulceration at the seat of stricture, you may be quite sure that some of the urine will escape from the canal, and will pass into the cellular tissue of the scrotum or perineum, or both.

Original Papers.

CLINICAL OBSERVATIONS

ON

LESIONS OF ARTERIES AND SOME EFFECTS OF THE DELIGATION OF THEIR TRUNKS;

CONCLUDING WITH A CASE OF ENCEPHALOID CANCER OF THE LEG TREATED BY LIGATURE OF THE POPLITEAL ARTERY.

By John D. Hill, F.R.C.S.,

Surgeon to the Royal Free Hospital, and Assistant-Surgeon to the Royal Orthopædic Hospital.

(*Concluded from October number—p.* 532.)

Encouraged by the foregoing results, I thought that a vascular cancerous growth of the leg, which was draining the patient to death by repeated losses of blood, might on a similar principle be treated, and with this view I ventured to ligature the popliteal artery. Assuming the growth to receive a larger blood-supply than normal tissue occupying equal space, it was not unreasonable to suppose that a sudden diminution of the arterial current would sensibly reduce its vitality, or, in common parlance, "starve it out."

How far this was accomplished will be seen by a perusal of the following case, which I report *in extenso*:—

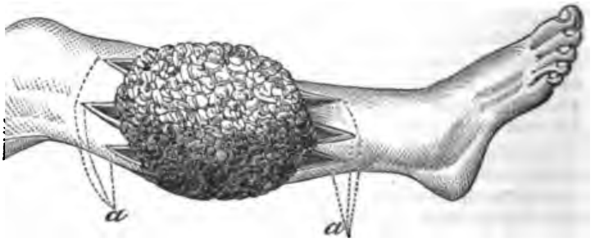
Case 6.—Sarah H——, aged fifty-four, was admitted into the Royal Free Hospital, under my care, on Sept. 5th, 1868.

History.—By occupation a dressmaker, unmarried, of healthy extraction, she had enjoyed good health until twenty-four years of age, when a swelling appeared in the right groin. This suppurated and burst, leaving an open sore for several months, which subsequently healed. Ten years later an ulcer formed on the right leg; and, as soon as this began to heal, the left became similarly affected. These ulcers for a time alternately healed and broke out; but ultimately that on the right leg closed, and gave her no more trouble. The left one, however, remained in a chronic state until the end of last year, when it gradually lessened to the size of a fourpenny-piece. About this time the menstrual function ceased, and soon afterwards she felt a throbbing pain and sense of fulness in the cicatrix tissue, followed, a few weeks later, by a substance sprouting from the sore. Pain now began to subside; but the growth steadily increased, and by the end of March had attained the size of an egg. Occasional bleeding from its surface rendered it less exuberant for the time being, and was always followed by a sense of relief. Continuing to enlarge, the tumour spread beyond the cicatrix of the old ulcer; and latterly hæmorrhage became so frequent and excessive that she came to the hospital to seek admission, when she was in the following condition:—

General condition.—She had lost flesh, was pallid, anæmic, and dejected, with a small compressible pulse, coated tongue, irritable stomach, and confined bowels. The temperature of the body was low; skin of a yellowish tint; expression of countenance anxious, and she had occasional pain in the lumbar region. The intellect was unimpaired; organs of special sense normal; lungs emphysematous; heart's action feeble—Sounds harsh and sharp; urinary and generative organs apparently healthy; veins and lymphatics free from disease.

Local condition.—Occupying nearly one-half of the circumference of rather more than the middle third of the right leg was a new growth. This projected about an inch above the plane of the surrounding skin, and overlapped it. The surface (covered with arterial blood) was fragile, pulpy, painless, and very vascular, and seemed to spring from the deep structures, in its out-growth receiving a constriction from the fascia of the leg. A probe could be hooked beneath this all round; and on making muscular traction, slight mobility was noticed in the tumour; hence implication of the extensor and peroneal muscles. She complained of a sense of fulness at the seat of disease, and nervous pains referred to the branches of the anterior tibial, musculo-cutaneous, and external saphenous nerves; and as to position, the knee was semiflexed, and the toes pointed.

Progress and treatment.—Although suspicious of the real nature of the disease, I thought it right to remove all constriction from the exuberance; and having inserted a director beneath the fascia, I freely divided that structure and the superjacent



a a, Incisions.

integument at six points, when each wound widely gaped. This was followed by cessation of all nervous pains and the sense of fulness complained of; but in a fortnight the growth had so considerably increased as to present the appearance depicted in the figure on previous page.

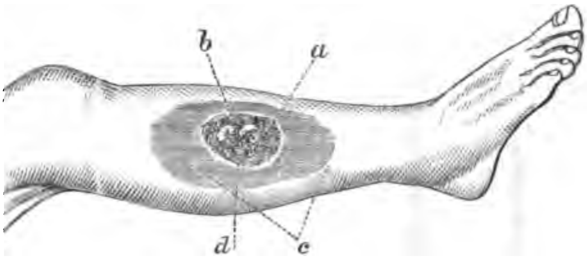
Microscopic examination.—Several portions of the structure, having been subjected to the action of dilute acetic acid, were now placed under the field of the microscope, and examined, with the following result:—Nucleated cells (caudate); free nuclei in abundance, embedded in a semi-fluid intercellular substance; stroma—i. e., a delicate nucleated membrane, intersecting the growth in all directions; granular and fatty matter.

The character of the disease being now unmistakable, I proposed to ligature the popliteal artery, and the patient having consented, on Sept. 22, 1868, chloroform was administered, and I operated in the following manner:—The body being nearly prone, with the knee extended as far as possible, an incision five inches in length was carried from the apex of the popliteal space along the posterior margin of the semi-membranosus muscle; next, the fascia lata was incised, and the muscles were drawn aside by retractors; then, partially flexing the limb, the fat was carefully divided, the internal popliteal nerve hooked away, and the artery sought for on the upper part of the popliteus muscle. Independently of pulsation, the vessel could be definitely felt under the finger, as was proved by compressing the femoral. The aneurism needle (armed) was now passed between the vein and artery, and, hooking around the vein, was made to lift it gently from the artery; with the tip of the left forefinger the former was spread out in the concavity of the needle, and, its outer margin having been defined, a minute puncture was made in the connective tissue to allow the point to pass through; the needle was then turned upon itself to encircle the artery, and the ligature having been disengaged, the needle was withdrawn and the former secured. The wound was now closed, and the limb, having been fixed to a lateral splint, was invested with cotton wool and oiled silk.—Ten hours after the operation she was comfortable, and only complained of slight numbness in the toes. The growth was reduced in size, and of a spleen color.

Sept. 23rd.—9.30 A.M.: Has slept well during the night. Pulse 84. Temperature of feet: right, 92 1-5°; left, 93 4-5°. Growth is now black and gangrenous.

27th.—Temperature of extremities is equal. Numbness absent.

On the seventh day after the operation the growth was not more than one-third its original size. This continued wasting until nothing was left but the stump or matrix, which seemed to arise from the interosseous membrane, extensor and peroneal muscles. In the meantime the popliteal wound suppurated, and the ligature came away on Oct. 8th (sixteenth day). The extensive ulcerated surface left by the destruction of the outgrowth proceeded to granulate and cicatrise up to a certain point, when it became stationary. On Oct. 30th the popliteal wound was sound, and the limb presented the appearance here depicted. Subsequently small portions of bone exfoliated from the fibula; but the patient continued to improve until Dec. 20th, when a change occurred. Her appetite now fell off, and the cicatrix tissue surrounding the granulations gave way, and ulceration extended over the newly-healed surface. On probing the ulcer, the fibula was found spongy and carious, and several loose pieces were extracted. To keep the muscles at rest, the limb was slung up with lateral interrupted splints, which permitted the dressing of the ulcer without disturbing the leg.



c, Cicatrix tissue. *a*, Callous edge of ulcer. *b*, Granulations upon matrix. *d*, Fossa communicating with carious fibula.

Jan. 2nd, 1869.—Her health is unsatisfactory, her appetite is failing, and she is losing flesh; although she suffers no pain in the limb, the matrix, if anything, is increased by the out-growth of large flabby granulations. These, however, do not yield the same microscopic appearances as the original growth, but resemble ordinary strumous granulations.

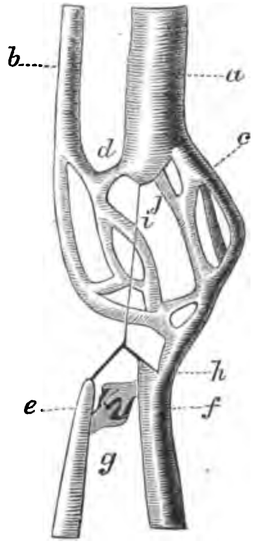
6th.—Was attacked with rigors this morning, followed by thirst, sickness, vomiting, and tenderness in the course of the femoral vein. Pulse 140; respiration 38. Odor of breath saccharine; ulcer glassy, and all its secretion is arrested.

10th.—Had an attack of hæmorrhage this afternoon, which seemed to well up from the deep part of the ulcer. This was soon controlled by pressure. Is very weak and low, evidently sinking.

13th.—9 A.M.: Had a recurrence of hæmorrhage; but it had ceased before Mr. Murphy reached the ward. When I saw her a few minutes afterwards, she was moribund, and died at 1.30 P.M.

Autopsy, twenty-four hours after death.—Head: Brain healthy.—Chest: Lungs emphysematous. Heart soft, friable, and atrophied; cavities on right side contained fluid black blood; left chambers empty; vegetations on aortic and mitral valves. Pericardial scars. Weight 5 oz.—Abdomen: Liver fatty; capsule adherent; weight 2¼lb. Kidneys cystic; structure fatty; weight—right 5 oz., left 6 oz. Spleen large; weight 12 oz.—Veins: Superficial epigastric veins as large as a crowquill; tortuous and plugged; coats as thick as an artery. Femoral vein plugged throughout; firmly adherent to artery; coats greatly thickened and much congested; plugs extending into the common iliac vein. The anterior tibial vein contained pus.—Affected limb: Part of the middle third of the fibula was soft, spongy, carious, and easily breaking down under pressure; peroneal and extensor muscles (corresponding to, and continuous with, external ulcer) covered with granulations; matrix of growth found springing from interosseous membrane and periosteum; œdema of foot.

The popliteal artery is occluded. Anastomotic circulation is carried on by the anastomotica magna and superior internal articular arteries communicating directly with the anterior tibial recurrent, and by the descending branch of the external circumflex artery receiving the superior external articular and inosculating with a branch of the anterior tibial recurrent. The posterior tibial artery is supplied by the inosculation of some muscular twigs arising from either artery, and passing across just opposite the anterior tibial recurrent. Posterior artery is small and contracted. (See Fig.)



a Popliteal artery.
b Descending branch of external circumflex.
c Anastomotica magna.
d Superior external articular.
e Posterior tibial.
f Anterior tibial.
g Communicating branches between tibials.
h Anterior tibial recurrent.
i Obliterated popliteal.
j Superior internal articular.

In conclusion, I may refer to a few points which seem to me important in this interesting case.

Our patient for years had suffered from ulcerated legs which heal at a critical period of life. We have therefore contemporaneously the removal of a safety-valve in the healing of a chronic ulcer and the cessation of the menstrual function; thus *primâ facie*, a condition of the body susceptible to the invasion of a new growth. But, so far as I am aware, it is unusual for encephaloma to spring from ulcers or cicatrices like epithelioma, and in this case the selection of the site of a healing ulcer may perhaps be regarded as exceptional.

During the progress of the disease she complained of a sense of fulness in the growth, and pains referred to the course of the cutaneous nerves. These symptoms were undoubtedly due to pressure, as was clearly shown by the relief experienced after attacks of hæmorrhage, and by gaping of the incisions, which were carried through the fascia and integument for the removal of tension.

Pointing of the toes was dependent upon undue yielding of the extensor and peroneal muscles (by the invasion of their fibres), and, as a consequence, contraction of their opponents, the flexors.

Rapidity of growth, repeated hæmorrhage, and absence of localised pain may be considered characteristic features of encephaloid disease after the tumour has been relieved from the pressure of the fascia and integument.

The microscope may be then said to complete the diagnosis.

Now as to operation. Was it advisable to ligature the popliteal artery or to amputate the limb? I think that the shock of an amputation in her impoverished condition would of itself have proved fatal. Therefore I resorted to the minor operation.

The ultimate issue of this case does not in my mind militate against the practical application of the principle advocated, seeing that the patient's life, which was fast ebbing away before the operation, was by it prolonged for a period of nearly four months.

The accidental accession of phlebitis, in a constitution impaired by degeneration of the heart, liver, and kidneys, placed her beyond recovery, and latterly sudden hæmorrhage from one of the anastomotic vessels further reduced her. The idea of ligaturing the femoral artery was abandoned because of her moribund condition; indeed, at no period after the invasion of phlebitis was there any prospect of recovery.

Caries of the fibula was probably due partly to pressure, and partly to death of the periosteum with the growth.

In the operation three points are worthy of notice—

1st. The great depth of the wound arising from the semi-flexed position of the knee after long disuse, obviated by a free external incision.

2nd. The tension of the popliteal boundaries obviated by partially flexing the knee.

3rd. The mode of applying the ligature by lifting the vein from the artery just far enough to enable the operator to perforate a fine web of tissue, and then (turning the needle upon itself) to encircle the artery without disturbing the nutrition of either vessel by a more extensive dissection.

The point at which the artery was ligatured rendered the operation difficult, but the importance of controlling the current close to the bifurcation was the chief consideration.

As to diet and medicine. The former was of a most nutritious kind, with a fair allowance of stimulants; and the latter consisted of tonics to assist in supporting the vital power, sedatives to relieve pain, and disinfecting lotions to cleanse the ulcerated surface.

Guilford-street, June, 1869.

◆

ON THE

STRUCTURE OF THE ADULT HUMAN VITREOUS HUMOR.

By David Smith, M.D., M.R.C.S.

THE RELATION OF THE VITREOUS HUMOR TO INTRA-OCULAR TENSION.

(Concluded from September number—p. 471.)

Another agency which consumes the formative material contained in the aqueous fluid of the eye is the nutrition of the crystalline lens and its capsule. In early life the growth of the crystalline body is considerable, and at every age, but especially in youth, it is subject to a certain amount of tissue-change. As this body is completely isolated within the aqueous capsule, nutriment can reach it from no other source than through the medium of the fluids of the anterior and posterior hemispheres. The pabulum on which it lives is the albumen dissolved in these fluids; and whether or not that substance passes through a modification in its transmission through the vitreous tissue and capsules of the lens, a regular repletion of the fluids of the eye is required to supply the necessary amount of formative material, without which it would die. As showing the relation between the demand for nutriment possessed by the crystalline lens and the regular repletion of the aqueous capsule with healthy fluid, when, from inflammation of the choroid and subsequent occlusion of many of the vessels of the ciliary processes, both the quantity and quality of the aqueous fluid poured out by these organs is lowered, or, in other words, when atrophy of the globe supervenes, the cystalline lens invariably becomes opaque from molecular death of its substance.

The relation which the amount of fluid bears to the demand made upon it by the nutritive processes going on within the aqueous capsule is also shown by the diminution of that fluid in senile atrophy. In this instance the aqueous fluid of the eye, which contains the formative material on which the tissues within the capsule live, follows the example of all other nutritive fluids of the body in diminishing as the reparative processes within the eye become less active. Hence the eyes of the aged have a shorter range of refraction than those of youth and vigorous manhood, which is partly attributable to the diminished quantity of the aqueous and vitreous humors.

Thus, then, in health, a constant relation subsists between the nutritive changes going on within the aqueous capsule and the amount of fluid by which it is distended. The tear and wear of these parts are, no doubt, small as compared with more active tissues of the body; but the percentage of formative material dissolved in the fluid is also small, and more than likely bears a relative proportion to the nutritive requirements of the tissues. In performing its twofold purpose, the physical and the vital, the aqueous fluid is constituted so as to fulfil both efficiently. Of the physical—in refracting the rays of light,—it must possess a certain degree of transparency and specific gravity; in forming the eyeball into a sphere, it must distend the aqueous capsule to give the latter the character of a solid: and of its vital functions—it must be regularly replenished by a proper selection of formative material, of which it must possess a certain percentage for nutritive purposes. The membranous septa through which the fluid filters in its passage into the aqueous capsule, seem to possess such a degree of porosity and elective affinity as to give transmission to that proportion of water, salts, and albumen most fitted to fulfil this duplex purpose.

But our knowledge of the principles which regulate the repletion of the aqueous capsule in disease bears out the statement that it is conducted with due regard to the vital processes which are perpetually in operation within it. Here also the same general rule exists: the greater the demand for formative material, *cæteris paribus*, the greater the supply. Thus, when the vitreous humor is undergoing inflammatory action, a great proliferation of new products within it takes place, and to meet the demand occasioned by this morbid process, the current of fluid into the humor is accelerated, and, as a consequence, the formative material is increased. Again, when a foreign body is lodged in the vitreous humor, an excitement of the nutritive processes immediately takes place in and around the humor, which ends in the influx of a large amount of plastic material, and ultimately in the encystment of the foreign body. Now, in these cases the fluid may be poured into the humor under the same conditions as in health—i. e., through the medium of the capillaries of the ciliary processes and the structureless membrane of Zinn, without breach of either; but, as illustrating the relations of the supply of vitreous fluid to the requirements for it, these membranous septa not only allow the transmission of a more rapid current into the humor, but they give passage to a fluid containing a higher percentage of solid material. In no other way can the morbid processes referred to be accounted for. But again: when a cataract is undergoing absorption after the needle-operation, an excitement takes place in the vessels from which the aqueous fluid is derived, and, as a consequence, the currents of fluid into and out of the aqueous chambers necessarily become accelerated, all of which processes seem to be instituted for the purpose of dissolving and carrying away the degenerated products of the crystalline body. No doubt in this case the increased amount of fluid which penetrates into the aqueous capsule carries with it increased material for repairing the waste; but as the epithelial cells of the crystalline lens are broken up, the reproduction of the latter is impossible.

In cases in which great morbid nutritive changes are going on within the aqueous capsule, such as occurs during the encystment of a foreign body in the vitreous humor, it is seldom that there is increased tension of the globe. Indeed, it is generally the case that the intraocular tension, both of the cornea and sclerotica, is reduced below its normal standard, owing to diminution in the amount of fluid within the aqueous capsule; as if the fluid interfered with the development of the inflammatory products necessary for the purposes of encystment. In these cases there is, no doubt, increase both of the in-going and out-going currents; but as in health so in disease, the out-going current passes the most readily through the membranous septa, owing to the fluid of the humor, before its absorption, being deprived of its colloid materials. Therefore the explanation of the decrease of tension of the globe, in cases in which the formative process within the aqueous capsule is in excess, seems to be this: that the in-going current (from the large amount of formative substance which it contains), is relatively less, as regards the amount of fluid, than the out-going current, which is composed almost of water alone. And therefore, though the process by which a foreign body becomes encysted in the vitreous is a conservative action, the effects upon the eye are very often such as to destroy it as an organ of vision. The vitreous fluid gradually diminishes, the hyaloid shrinks, dragging with it the retina, and ultimately the eyeball may become atrophied—results which form a sufficient argument to condemn the operation for depression of cataract, which consists in thrusting the opaque lens into the substance of the vitreous, where it too often acts the part of a foreign body.

But the constant repletion of the aqueous capsule with fluid presupposes a regular flow of healthy blood to the ciliary processes, the parts from which the fluid in health is derived. The ciliary processes are supplied with arterial blood chiefly by branches from the arterial wreath in the substance of the ciliary muscle formed by the long posterior and anterior ciliary arteries. The venous blood of the ciliary processes is carried by a system of veins directly backwards into the vena vorticosa of the choroid, without, as in the case of the corresponding arteries, passing into the ciliary muscle. Through these vessels in health an unimpeded stream of blood flows to and from the ciliary processes, and it is from these that the fluid of the aqueous capsule is derived, and by which the waste materials are carried away. Whatever impedes the return of blood from the ciliary processes will occasion a greater lateral pressure upon the vessels and the exudation of an increased amount of serous fluid into one or other of the hemispheres of the globe—generally into the posterior hemisphere; and whatever prevents the blood from being brought to the same parts in due quantity will have an opposite effect—that of restraining the flow of fluid into the aqueous capsule. It is the latter condition to which I wish specially to advert in this place. One cause by means of which a regular supply of blood is prevented from flowing to the ciliary processes is inflammation of the corpus ciliare; for though the vessels of the ciliary processes may be increased in size, and an increased amount of fluid may be poured into the aqueous capsule during the earlier stages of the disease, by-and-by the vessels of the ciliary processes become occluded by matting of the tissue, and the amount of fluid poured out gradually decreases, which may end in atrophy of the globe. It seems likely that this is the explanation of many cases of separation of the retina from subretinal effusion—the ciliary processes ceasing to pour out the vitreous fluid in due quantity, the hyaloid fails to be distended, the retina which is spread out upon the hyaloid is not sufficiently supported, and the function of the ciliary processes is vicariously thrown upon the choroid proper, the capillaries of which exude serum to fill the space left by the receding vitreous. In the case of a child one year old, one of whose eyes was enucleated on the supposition that it was affected with medullary sarcoma, and which I had an opportunity of dissecting, I found the ciliary processes entirely matted with lymph, so that no vessels were discernible, the vitreous was completely absorbed, the retina reduced to a shrunken cord, which extended between the optic nerve and the crystalline lens, and the posterior hemisphere of the globe filled with a yellowish clear serum, an effusion evidently from the choroid proper. If this case had been watched during the course of the disease, it is likely that it would have been seen to go through all the stages of subretinal effusion until the vitreous was completely absorbed. A mode of treatment has lately been adopted for separation of the retina, which consists in puncturing the hyaloid and retina with a needle at the part of separation, so as to allow the dropsical fluid to escape into the vitreous, and the retina to fall back in contact with the choroid. In performing this operation, if the above explanation is right, a distinction must be made between those cases of separation of the retina arising from atrophy of the vitreous, and others arising from inflammation of and effusion from the choroid proper. In the latter class of cases the operation may succeed; in the former nothing but harm can arise from it.

The same pathological condition would also seem to explain the reduction of intraocular tension in cases of subretinal effusion as compared with separation of the retina from medullary sarcoma. It has been pointed out by von Graefe, and is found by others to be *generally* true, that in separation of the retina, accompanied with effusion of fluid, there is diminution of intraocular tension, whereas in separation from subretinal tumour the intraocular tension is either normal or above the average of health. Now in the first class of cases atrophy of the vitreous is the first manifestation, the most marked symptom of which is diminution of intraocular tension; and, therefore, effusion from the capillaries of the choroid proper takes place, not to augment the normal tension of a healthy eye, but as a consequence of its reduction below the healthy standard. In the other class of cases, that of separation from a tumour pushing the retina and vitreous before it, it takes place most frequently in a globe previously of the normal standard of tension, and the super-addition of the distending force of the morbid growth raises the tension above the average of health.

After wounds of the ciliary body the eyeball often becomes soft and atrophied. Here, again, the explanation is, that many of the vessels from which the fluids of the eye are derived have been wounded and subsequently obliterated. The same thing must also occur to a greater or less extent after repeated punctures of the sclerotica for division of cataract, and which accounts for the softness of the globe which follows in these cases. I might go on enumerating illustrations by way of establishing the same pathological principle, but I will be content with one other, I mean the explanation which this pathological condition affords of the *modus operandi* of the operation of iridectomy, performed for the relief of intraocular tension. The vessels of the ciliary processes and iris arise from the one source, the great arterial circle of the iris, which forms a wreath within the ciliary muscle and close to the bases of the iris. Those branches to the iris pass over the boundary line, separating the latter structure from the ciliary body, and proceed in a concentric direction to the pupillary, border where they pass directly into veins. The arteries have a pretty straight course from the periphery to the pupil, as may be observed even in the living subject, but they anastomose with each other several times in their course. The veins of the iris have a similar arrangement. The latter, however, after leaving the iris, do not, like the arteries, form a circle in the ciliary muscle, but pass directly backwards into the vasa vorticosa of the choroid. Now it is a well established observation, that after an artery has been severed by ligature or the knife, its proximal end becomes obliterated up to the nearest large branch. When, therefore, a segment of the iris is cut out, that part of the arterial circle corresponding to the part of the iris removed will become occluded and afterwards completely obliterated, and this will the more surely happen if the strip of iris has been removed up to its periphery. But, as has been stated, the great arterial circle of the iris is also the source of supply of the ciliary processes—the nutritive organs of the vitreous humor; and, therefore, according to the extent to which the arterial circle is obliterated by the operation, so will the supply of blood be cut off from these organs, and the flow of the vitreous fluid diminished. The explanation, then, of the effects of iridectomy in reducing intraocular pressure is, according to this theory, that it cuts off a great part of the arterial supply, not only from the iris but from the ciliary processes, and diminishes in the same ratio the amount of the in-going current into the vitreous humor; while, as the veins of the ciliary processes have no connexion with the iris, they are not affected by the operation, and the absoption of the vitreous fluid goes on with unimpeded vigor until the balance which normally exists between the fluid and the limiting membranes of the globe is again restored.

These are the chief principles which regulate the amount of fluid of the aqueous capsule of the eye in health and disease. But a theory has lately been propounded that the humors of the eye in health are controlled in amount by nerves, in the manner of the secretions of certain glands, and especially the lachrymal gland, which is generally regarded as being under the influence of the nervous system. The only argument in favor of this assumption is, that the humors of the eye have been commonly, and for a long period, called *secretions;* but if we except that fact, no analogy whatever exists between these fluids and the secretions to which it is sought to establish a resemblance. The aqueous and vitreous fluids contain histogenetic material capable of undergoing development into a compound of a higher form; they are poured out, and have as one of their objects the nutrition of certain structures; they are used in proportion to the physical and vital requirements of the tissues; and between these fluids and the structures which limit them certain vital relations subsist. While the tears, on the other hand, have a totally different function, and are intended to be extruded from the system without reference to quantity or the nutrition of any tissue whatever. But taking it for granted, for a moment, that the aqueous and vitreous humors are secretions, in the common acceptation of the term, the flow of all secretions of the body which have been proved to be presided over by the nervous system, is of an intermittent character, even in health, and is influenced by sensory impressions and the mind—conditions which are conferred upon them by the nervous system, but which, if they affected similarly the fluids of the eye, would subject that organ to hourly variations in its tension, and would be antagonistic to its functions. Moreover, the intermitting flow of the tears is a physiological condition; while irregularity in the flow of the fluids of the eye is a pathological phenomenon.

Though, therefore, it may be convenient to call the fluid humors of the eye *secretions,* they do not merit such an appellation, and cannot be said to be under the influence of the nervous system as the secretions of the body ordinarily are; but, as nutritive fluids, they must, as well as every component part of the body, be considered to be more or less under the guidance of the nervous system. It would appear as if this influence consisted in the regulating action of the vaso-motor system on the size of the vessels from which the humors are derived; for no nerves penetrate the hyaloid membrane and crystalline capsule, and therefore the nervous system cannot act directly on the parts contained within these membranes. We have an illustration of this mode of nervous action upon the nutrition of the humors in cases of irritation of the iris or ciliary body from displaced or enlarged crystalline lens. In such a case, the vessels of the ciliary processes enlarge and throw out fluid like the vessels of every other part of the body when under the same conditions.

Besides the vaso-motor system of nerves, the ciliary body and iris are largely supplied with branches from the fifth pair. This latter nerve has considerable influence over the nutrition of the eye, and it is reasonable to suppose that when it is diseased the eye must suffer as well as other parts to which it distributes branches. In neuralgia of the fifth nerve there is a disturbance of the nutritive actions of all parts which the affected branches supply—dilatation of the vessels, serous effusion and swelling accompanied, of course, with an intermittent pain; and in some diseases of the eye the same symptoms occur—dilatation of the vessels of the ciliary body and iris, increase of vitreous fluid, and heightened tension of the globe,—which, in the absence of all inflammatory action, and the presence of well-marked intermittent exacerbations of disease, justify us in placing them in the category of the neuralgic affections. I refer more especially to glaucoma, which, in the pure form of the disease, seems to consist of neuralgia of one or more branches of the fifth nerve, supervening in an eye the elasticity of the aqueous capsule of which has, from age or some depressing cause connected with its nutrition, lost much of its resistance to the forces of imbibition and lateral pressure of the blood within the vessels of the ciliary processes, so that the in-going current into the capsule (already exalted in force) preponderates, and is only resisted and held in check when the fluid of the capsule comes to press on the outer tunics of the globe.

Glasgow, 1869.

◆

ABSCESS OF THE LIVER.

A NEW TREATMENT, EMPLOYED SUCCESSFULLY IN FOUR CASES.

By H. Blanc, M.D., M.R.C.S., F.R.G.S., &c.,

Staff Assistant-Surgeon, Bombay Army, Etc.

(*Concluded from November number—p.* 598.)

In all deep abscesses of a phlegmonous character we meet with the same successful results.

A private belonging to the 4th (King's Own) Regiment, was admitted into the Ghizree Sanatorium early in 1862. He was suffering from a large abscess in the psoas region. After the application of two caustic issues he rapidly recovered.

I have endeavored to prove, as far as possible, in the first part of this paper, the great analogy existing between an ordinary phlegmonous inflammation and hepatitis, and between the abscess resulting from the first with the one due to the other. It is this great similarity which induced me to apply to hepatic abscesses the treatment which in other phlegmonous abscesses had given me such favorable results.

I will now give a summary of the four cases of hepatic abscesses where caustic issues were applied. Three of them came under my care whilst in charge of the Ghizree Sanatorium in 1862; and I have since received reliable information as to the health of these men, and am able to assert that, in the three cases, the recovery has been complete. The fourth case was treated by Dr. M. Skues, of H. M.'s Depot, Kurrachee, who kindly forwarded me the summary here given textually.

Case 1.—Hugh E——, private in the 4th (King's Own) Regiment, aged twenty-six years. Completed years of service seven years, five of which were passed in India. He was admitted into the Ghizree Sanatorium on the 19th of May, 1862. The diseases were intermittent fever and hepatitis. He was a spare-built man, looking very much worn out; much reduced in flesh and strength. Came from Hyderabad. He had previously suffered from hepatitis; but did not complain of the liver whilst at Ghizree.

On the 5th of July he complained of an uneasy feeling in the right side. There was a certain dulness on percussion perceptible between the sixth and the eighth ribs; none in the epigastrium. Tongue clean; bowels open; stools well colored; pulse 74, equal and small. Dry cupping to the side; to take an aperient draught.

July 9th.—Dull pain in the right side. Pulse 86; small and compressible. Had several cold shivers yesterday. A tumefaction exists between the sixth and seventh ribs posteriorly, painful on deep pressure, and dull on percussion. He cannot rest at all on the left side. Two applications of Vienna paste, of the size of a rupee, were made on the tumefied parts. Ordered a saline aperient, spoon diet, and two ounces of wine.

16th.—He is weak; appetite moderate. The eschars have not yet fallen; the tumefaction is less. Ordered extract of taraxacum, one scruple; dilute nitric acid, twenty minims; quinine, ten grains; water, four ounces: half to be taken morning and evening. Morphia, half a grain at bedtime. Spoon diet; wine, two ounces; brandy, one ounce.

25th.—Much less dulness on percussion in the side, but some at the inferior margin of the ribs, where deep pressure provokes pain. Two applications of Vienna paste to the painful part.

Aug. 6th.—He has of late much improved. Since this morning, however, he complains of fulness in the epigastrium. There is dulness on percussion; pain on deep pressure; pulse slightly frequent. Ordered a saline aperient; and a caustic application on the epigastrium.

11th.—The liver is much reduced in size, and much less painful on pressure. The issues discharge freely.

He was discharged on the 1st November, much improved in health.

He was afterwards invalided for syphilis consecutiva, and readmitted for that disease into the Ghizree Sanatorium on the 25th November. He left the Sanatorium at the end of February, to embark for England. During all that time he presented no symptoms of hepatitis or of hepatic abscess.

CASE 2.—Kehr V——, private, 109th Regiment, aged twenty-four years; three years' service, two years in Scind; admitted into Ghizree Sanatorium March 16th, 1862. He was suffering from abscess of the liver opened into the right lung, with abundant expectoration of pus. He was on admission weak and much reduced; pulse small and weak; hectic fever; the epigastrium and the hepatic region were tumid and painful; the liver was enlarged, compressing the inferior lobe of the right lung. Five caustics of Vienna paste were applied on the hepatic region. The treatment consisted also in diuretics, mineral acids, an occasional laxative, and afterwards preparations of iron and chinchona. After several relapses, the expectoration of pus was finally completely suppressed, the liver was much reduced in size, and health greatly restored. He was ultimately invalided, and joined the depôt at Kurrachee, where he so completely recovered that he applied to remain in India, having no more reason to go home.

CASE 3.—John D——, No. 566, private, 9th Regiment, admitted into Ghizree Sanatorium on April 1st, 1863; aged twenty-three; completed years of service, four years; disease, acute hepatitis. A weakly-looking man, sent from Hyderabad as convalescent from acute hepatitis. He suffered shortly after his admission from acute hepatitis and pleuritis, the latter disease having been brought on by the ulcerative inflammation succeeding the opening of an hepatic abscess through the right lung. On April 24th, when apparently in a much better state of health, and when all traces of pleuritis had disappeared, the cough suddenly returned, and was followed, after a very severe fit of coughing, by an abundant purulent expectoration. There were dulness and tenderness between the sixth and eighth ribs, weight and uneasiness in the hepatic region, and subcrepitant rhonchus between the sixth and eighth ribs. Treatment: Spoon diet, wine, taraxacum and acid.

April 26th.—Very abundant purulent expectoration, of a rosy color, mixed with streaks of blood and mucus. No dulness under the false ribs, but some between the sixth and eighth. He cannot lie on the left side. Vesicular murmur heard all over the right side of the chest, and some large crepitant rhonchi heard between the fifth and eighth ribs. No pain, except on deep inspiration; but some sense of weight and uneasiness in the hepatic region. No cough, except to expectorate. Expectoration abundant, of about four or five ounces of pus daily. Pulse 90, small, regular; Skin warm; very weak. He was seen by Dr. Ritchie, who concurred in the diagnosis—namely, hepatic abscess opened through the lung. Five caustic issues applied between the fifth and eighth ribs. Decoction of chinchona, two ounces; ether, twenty minims: twice a day. Citrate of iron and quinine, six grains; with a sufficient quantity of the extract of gentian: twice a day. Wine and roast chicken.

May 4th.—Expectoration much reduced; issues discharging freely; feels better, but complains of great weakness; pulse small, but regular; no heat of the skin. Continue treatment, with porter and brandy.

9th.—Continues to improve and to gain strength; has not coughed nor expectorated for the last twenty-four hours. This morning, almost without coughing, he threw up about two ounces of pus speckled with blood. To have extract of taraxacum and mineral acid; iodide of iron, half a grain: twice a day.

10th.—Much expectoration this morning, about three ounces of pus mixed with blood; it came quite easily, and almost all at once, in the early part of the morning. Four caustic issues posteriorly between the sixth and eighth ribs. Continue treatment.

11th.—Only a little purulent and sanguinolent sputa this morning; no cough.

12th.—Expectorated this morning about a couple of ounces of dark blood, speckled with pus; complains of weakness; no cough. Continue treatment.

13th and 14th.—No expectoration whatever; feels better.

16th.—Doing well; improving rapidly; can draw a long breath without pain; fast gaining strength; respiration good; no abnormal sounds.

22d.—Discharged to the convalescent ward. He gradually improved and gained strength. He remained at the Sanatorium for some time on account of dyspepsia; he was a great smoker. On no occasion did he ever complain of pain in the hepatic region; there was no recurrence of the expectoration or cough. Before I left the Sanatorium, though still weak, he was one of the "Sanatorium Cricketers."

CASE 4.—Henry B——, (No. 522), gunner R.A., aged twenty-four; seven years' service, five in India. He was sent to Kurrachee in the spring of 1862, to await an opportunity to join a battery up country, to which he had volunteered from the local service. While at this station in August last, he had a severe attack of acute dysentery, accompanied with hepatic tenderness, for which he was a month under treatment. In November he had a return of the complaint, for which he was admitted into hospital early in December.

Symptoms of abscess in the liver manifested themselves; and on the 21st the abscess broke into the lung. He spat up about 12 oz. of pus and blood, and continued to expectorate about a pint in the twenty-four hours. On the 16th of January, at my suggestion, four issues of Vienna paste were applied on the liver. After this the sputa gradually lessened in quantity; and by the end of February it had entirely ceased, when he was discharged to barracks, having gained flesh, and being much better than before his last attack. When the abscess burst his strength was supported by generous diet, and a moderate allowance of spirits and porter.

Few remarks are needed on these cases. In three of them the abscess burst through the lungs; and in one instance several successive abscesses formed in the substance of the liver. Perfect recovery in all the cases was the result obtained; and where no other morbid condition was present (as in Cases 2 and 4), the men so completely recovered as to be able to join their corps, though one had been previously invalided. In only one instance was it necessary to repeat the application of caustic paste. I may here observe that these men were all weak and debilitated, all of them having either suffered formerly from hepatic disease, or just recovered from some serious illness; all consequently cases very unfavorable for absorption to take place. Nevertheless that result was obtained. It will also be seen by the above summaries that diuretics, mineral acids, tonics, &c., were at the same time employed as useful auxiliaries, and that care was taken to support the strength of the patients by a generous diet. Nothing in such serious diseases should be neglected, however great in itself is the value of the external application of caustic. In the fourth case the issues alone had all the honor of the cure; as, on account of the great debility of the patient, Dr. Skues very wisely endeavored to keep up the sinking strength of his patient by a well-regulated and generous diet.

Often we hear of a treatment over and over again successful in the hands of the first who employed it, and failing as frequently when again used by others. I believe that the majority of such unsuccesses are due to some slight differences in the *modus operandi*. In order to avoid, if possible such discouraging results, I will give a few details on the preparation of the Vienna paste, its mode of application, and the ulterior treatment of the cauterised integuments.

The Vienna paste, "Potassa cum calce" (Ph. L.), is composed as follows: caustic potash, an ounce and a half; quick lime, two ounces. The two substances must be carefully reduced to powder in a heated mortar, and quickly mixed. The powder ready for use should be kept in a glass bottle, previously well dried, and well stoppered with a new cork or ground stopper. To use the powder, a few drops of alcohol are added to the quantity intended to be employed, and made into a soft paste, neither too hard nor too liquid. The paste should always be prepared at the very moment it is required. The paste, having been mixed on a piece of stone or marble, is then applied by means of a small spatula or blunt knife. Each application should be of the size of a shilling, and of about three times the thickness of that coin. The paste should always be applied between the intercostal spaces under the false ribs, or in the epigastrium, as the case may require; but never on the ribs themselves. The application should be allowed to remain for fifteen minutes. When it is taken off, the surface must be gently washed with tepid water acidulated with vinegar. A warm linseed poultice, renewed every second hour, should recover the issues for the next twenty-four hours, after which square pieces of adhesive plaster cut in the shape of a Maltese cross should be applied over them, and renewed every morning. If, however, a more rapid action be required, the poultice should be continued for several days. In from ten to fifteen days after the application the eschar falls, and the granulations rapidly reach the surrounding integument. The granulations must be cauterised with nitrate of silver early and daily, otherwise they have a tendency to protrude.

Bedford-street, Bedford-square, July, 1869.

◆

BORDERLAND.

By Metcalfe Johnson, M.R.C.S.E.

What is Insanity? This is a question which requires a more accurate distinction between volition and reflex action than we at present recognise.

After the example of M. Paul Broca, in his treatise on "Human Hybridity," we may divide sensation into four classes: Anæsthesia, associated with acephalosis; Dysæsthesia, with idiocy; Euæsthesia, with common sense; and Hyperæsthesia, with morbid sensibility.

These divisions, like all other classifications in nature, are purely arbitrary and comparative, adapted to the limits of mental perception. As we increase the power of perception by microscopic or other means, we merely alter the relation of classification to truth. The intermediate conditions (just as in the case of black and white, light and darkness, positive and negative electricity, &c.) are imperceptibly different.

Coming events cast their shadows before. By producing convergent lines we are able to predict their point of contact. Now, in healthy and pathological anatomy we have converging lines of evidence, which casts their shadows so as to indicate the direction in which the solution of the difficulty lies.

There are certain mental conditions and pathological changes which are generally considered in the light of cause and effect.

Maudsley, speaking of volition in his recent work on the Mind, says: "A considerable proportion of the daily actions of life is confessedly due to the automatic faculty of the spinal cord." Lord Brougham ("Dissertation on Subjects of Science") makes the following remark: "May not the solitary wasp have its organs and its senses so constructed as to receive an immediate gratification from collecting and burying grubs? So the wasp's senses may make the flavor of a living caterpillar more grateful than that of a dead one." This idea may be called, for the sake of convenience, Hedonism.

The operation of organs under the influence of the sympathetic nerve is opposed to, and predominant over, volition—especially in disease, as witness hysteria, furor uterinus, alcoholism, &c.

Hunger is want; want is pain. Food produces relief; relief is pleasure.

Sexual desire is imperative, especially in the brutes. Relief is emphatically called gratification.

Volition in all cases requires a stimulus to call it into operation, and may be increased by use. A skilled trade, as watchmaking, cannot be performed by any exertion of the will until it has become first voluntary, and finally automatic by practice. Metaphysicians, from St. Paul to Hegel, have seen the difficulty expressed in the words: "I see another law in my members" (sympathetic instinct) "warring against the law of my mind" (cerebro-spinal experience).

The practical bearing of this question is the relation of pathology to crime and pauperism; but the following remarks have especial reference to the class called "refractory paupers."

There is a class of persons who are neither so insane as to require restraint or seclusion, nor so sane as to be able to control themselves—persons who, instead of producing, consume the taxes, and who are occasionally brought under the notice of the Poor-law medical officer to decide whether or not they are fit subjects for the punishment necessary to enforce order in workhouses; and the question how far their refractory habits are due to pathological change is of especial interest.

In the following table is shown the relative numbers of persons at present resident in the Lancaster Workhouse, with the probable cause of their pauperism. In the final column the causes are divided into three: drink, mental disorder, and other causes.

Cause of Pauperism.	Old		Young		Total.	Per Cent.*	Pr. Cent. of 3 Classes.	CLASSES.
	Men.	Wom.	Men.	Wom.				
Drink......	17	6	1	5	29	46	46	Drink
Insanity....	—	2	1	1	4	6	27	Mental disorder
Feeble mind	2	2	1	1	6	8		
Idiocy.....	—	—	2	—	2	3		
Eccentricity	—	—	—	2	2	3		
Paralysis...	1	1	1	—	3	4		
Epilepsy...	2	—	—	—	2	3		
Misfortune	2	1	3	1	7	11	21	Other causes
Laziness....	—	—	4	—	4	6		
Illeg. chldn.	—	—	—	3	3	4		
Totals...	24	12	13	13	62	94	—	—

* Round numbers are used for the sake of simplicity.

Of the 17 old men pauperised by drink, 7 are of high intelligence, and 10 of ordinary capacity.

Of the 4 young men pauperised by laziness, J. W——, twenty years of age, a beggar and thief, has been in reformatory and prison; refuses to work. A bad expression of face.

Of the young women eccentric, J. H——, No. 1, a clever, tidy girl, aged twenty-two, can read and write well; clever at her needle; has occasional attacks of refractoriness, when she is abusive and uses bad language. J. H——, No. 2, aged eighteen, is dirty; confined of a bastard, which she neglected. Has been ill-treated at home.

M. C——, and C. W——; three illegitimate children each.

The following cases illustrate the relation of pathology to pauperism and crime:—

W. W——, aged fifty. Very cunning in his refusal to obey orders (supposed to be due to feigned insanity); would fall on his knees in the presence of the master, and utter prayers in which he would boast of his power to evade the rules of the house. He was frequently brought up for insubordination and submitted to medical examination, but was pronounced unfit to undergo punishment. This proved correct, as he subsequently died insane. The post-mortem revealed chronic meningitis and softening of right anterior lobe of cerebrum.

M. H——, aged forty-eight, a similar case. Has been in an asylum, and often speaks of the comfort of that place as compared with the workhouse. Is now under medical care. Complains of delusions. On a liquid blister being applied, he wiped it off with his handkerchief; this he afterwards applied to his face, and produced a blister on the nose. The man is still ill, and is losing all his hair though his mind is quite restored. Evidence could be adduced to show this man to be sane or insane, as the case might require.

A. G——, aged forty, a decided refractory; a soldier of the class called "lawyers." Can read and write tolerably. When asked how many pence go to the pound, and given a week to find it out with pen and paper, he could not calculate the amount. I have often seen similar incapacity in working men. Emphysematous; has been in prison; a drunkard.

Numbers of cases will occur to every Poor-law medical officer, of lunatics who at the time of examination do not show sufficient symptoms of insanity to convince the certifying magistrate, and in which the case has to be adjourned.

J. G——, aged fifty, a powerful man, of weak intellect; occasionally intemperate. Can earn a living when so disposed. A source of great anxiety to his relatives, who are in an influential position.

J. T——, aged thirty-five, and H. B——, aged twenty-six. Scrofulous, of weak intellect, requiring extra diet. H. B—— has had pulmonary disease (both apices); has been in an asylum; a masturbator.

J. B——, aged forty. A criminal lunatic (attempt at rape); limited intelligence; a masturbator.

M. M'P——, aged thirty-one, By the courtesy of the medical officer at Fort Pitt, the following statement is given:—"Mental disease first manifested in India, 1867, following delirium tremens. Symptoms, acute mania. A stout, heavy-looking man, with a large, round, flat-topped cranium, on which were several scars. Left lateral development not equal to the right. From his own account he had led a wandering life; having been in the United States army, then in Canada, then a sailor, subsequently in the Indian army, and lastly in the British service. Confessed to having been much addicted to drink, though his records did not show him to be an habitual drunkard. Manner cheerful and rational. Memory good. At the time of his discharge the mental disease was in abeyance." Discharge note, "Indifferent character." He died of pleurisy at Lancaster.

Post-mortem.—Brain full size; no signs of wasted convolutions; slightly softened. Arachnoid opaque; several deposits of lymph on the posterior surface, one extending through the dura mater, and connecting the two hemispheres. Sulci of convolutions deep. The layer of grey matter *pale* and remarkably thin, but well defined from white fibres. Striæ of corpus striatum very well marked, as also those of the optic tract, which were firm and strong. Heart large, firm, and free from atheromatous deposit. No "soldier's spot." Right pleura entirely adherent; left free. Lungs emphysematous throughout.

Cases are numerous in which irritation of organs (controlled by the sympathetic) has produced insanity; as in that of a man insane with irritation of the glans penis: the glans being removed, his mind recovered its healthy tone. Uterine insanity, and those cases in which clitoridectomy has been recommended, furnish examples. I am not aware whether kleptomania has received pathological demonstration. Alcoholism presents numerous examples, not only of wasted convolutions, but, more frequently, of sympathetic disturbance.

It is well known that frequent exercise of an organ increases its power; e.g., the biceps of the rower; the nerves of a banker's fingers in detecting base coin; the sympathetic pains of opium-eaters; and the genital power of men given to frequent natural sexual excess. For the use of these organs determination of blood to the part is required: and in cases of intemperance the sympathetic nerve is nourished at the expense of the cerebro-spinal organs.

The experiments of Claude Bernard show that under sympathetic stimulation capillaries carry cell-forming blood which at other times were apparently in abeyance. This determination would appear to be at the expense of other organs. In the absence of the stimulus a want is felt by the part, thus producing what may be termed an altered hedonism. Anyone who has been obliged to use opium or morphia for a continuous period will recognise (in the precordial pain accompanying the interval between the doses) what is meant by an altered hedonism.

In the case of persons who cultivate the perceptions by intellectual pursuits, the instincts seem to suffer; and thus it is rare to find a great thinker also a great eater or a very sensual person. This would explain why intellectual fathers rarely produce vigorous and intellectual offspring. For the same reason we may see why persons (like our paupers) who have devoted their lives to drink are in most cases of very limited intellect.

Hysteria in some forms is a temporary insanity. The natural perceptions are altered by irritation of the uterus or genitals, under the influence of the sympathetic. But the pail of cold water stimulates the cerebro-spinal nerves, and by reflex action enables the sensory function to resume its authority over the sympathetic. The irritation produced through the genital system may be called the "hysteric hedonism."

The relation of the drinking habits of society to this question is too extensive a subject to be introduced here. Nevertheless it may be assumed that no medical man who has had any experience of alcoholism, and its effect upon the will, can fail to recognize that, as the habit increases, the power to resist the alcoholic hedonism diminishes.

Healthy anatomy shows us that abnormal distribution, and even excess or absence of organs, is of frequent occurrence,—from the double-headed or acephalous monster, to the varieties of an artery or even a capillary; while pathology shows us that congenital hereditary syphilis is also most frequent, producing in some cases marasmus infantium, and in others caries, ulcerated palate, assimilated cancer, and phthisis (the latter two I have witnessed): thus bearing out the Mosaic expression, "visiting the sins of the fathers upon the children?" or even realising Milton's words—

> "Of man's *first* disobedience, and the *fruit*
> Of that *forbidden* tree, whose mortal taste
> Brought death into the world and all our woe*—"

Taking these—the anatomical and pathological evidence—together, we see abundant reason for the belief that altered conditions must end in altered cells, and, by consequence, altered cravings, or altered hedonism.

The contour of various individuals leads to the conclusion that every member of the genus *homo* has his proclivity to some predominant quality, which, modified by the instruction of the surrounding circumstances of his life, results in the *Wohlgeboren* or gentleman, the haughty beauty, the man of genius, the girl of the period, the poet, the madman, the idiot, the thief, the murderer, the poacher; and why not the refractory pauper? That we recognise this law is shown when we speak of red-haired persons as lustful, fat persons as inert, &c.; as also when we acknowledge distinctive habits as belonging to races possessing brachy-cephalic and dolicho-cephalic skulls.

Taking these considerations in connexion with the vascular theory of mentation, we may see reason to think that the hedonism of a man, modified by the circumstances of his life, will tend, through reflex action, to result in the ordinary tax-consuming pauper on the one hand, and the refractory pauper on the other.

Mr. Disraeli ("Contarini Fleming") says: "My thought has been the consequence of my organisation; my action the result of a necessity not less imperious. My fortune and my intelligence have blended together, and formed my character." Under this view may not a sympathetic nerve (by "transmitted hereditary peculiarity") be so imperious in its demands as to lead its possessor either (uncontrolled by education) to drunkenness, masturbation, hysteria, &c., or (controlled by instruction through the cerebro-spinal nerves) to such a proper use of his instincts as to end in sobriety, manliness, and love? In the words of Tennyson,

> "It is the *little* rift within the lute."

Labor is the lot of man. Healthy, civilised man craves labor. Can the man whose hedonism is that of laziness, drink, &c., to the extent that induces him to become a tax consumer instead of producer—in other words, a pauper,—be looked upon as a sane, healthy man? Or ought we not rather so to submit him to the treatment of confinement, control, diet, and medical supervision as shall enable him, if possible, to support himself. This is in true accord with the spirit of law, which provides (not as of yore for retributive vengeance, but) for the maintenance of the well-being of the State. The tax-producer has a right to this protection against the tax-consumer as a return for his contributions levied by law for poor relief.

It becomes a question, then, whether the average hedonism of society, as exemplified in that section called paupers, does not call for increased interference, on the part of the State, in the form of extended education to the young, and in a modification of our police reformatory, workhouse, asylum, and prison discipline as applied to adults; and this legislation can only be carried out with judgment by reference to medical testimony and medical experience.

---

* Germ. *Weh*, pain.

Lancaster, 1869.

◆

ON

SOME OF THE CAUSES OF THE PREMATURE DECLINE OF THE CAVALRY SOLDIER.

By **Cosmo Gordon Logie**, M.D.,

Surgeon-Major Royal Horse Guards.

If attention be turned to the statistics of the general army for the seven years ending 1865, it will be seen that, out of 35,296 soldiers making claims for pensions at Chelsea, there were 24,995 of less than eleven years' service. It will be seen also that, out of men of less than six years' service, 309 were considered entitled to permanent pensions, and 16,110 to temporary pensions. I do not see how these figures can be explained except by the existence of some grave defects in the treatment of the soldier. It might be supposed, judging by the stastistics of mortality alone, that the Household Cavalry Brigade did not bear its part in the serious condition of unhealthiness which is hereby indicated; but there is a source of fallacy, as regards the mortality, which needs to be pointed out. It is unfair to compare the mortality of the Household Cavalry Brigade with that of the Line. The privilege of these regiments in being able to discharge a man at any time lessens the apparent mortality. The man discharged may die very soon after leaving, but his death does not appear in the Brigade returns; whereas in a Line regiment he would probably have remained and died as a soldier.

The soldier is a picked man, examined minutely, and enlisted young; in perfect health on enlistment. He is supposed to be clothed, exercised, fed with carefully-selected and well-cooked food; he is put up, it is said, in quarters as carefully selected and ventilated. Then why should he not be the healthiest of men? To discover this important reason, and point out ways and means for the better preservation of the health of the soldier, I shall examine the life of one of the Cavalry Brigade for the first two or three years of his service. In regiments like those of the Household Cavalry too much care cannot be taken with the *moral* discipline of the recruit: and, as Dr. Mouat says, "we must bear in mind that whatever diminishes sickness and mortality, and keeps the men in vigorous health, multiplies the power of those men to a degree that cannot be represented by figures." The recruit on joining the Royal Horse Guards is in debt to the regiment for necessaries to the amount of £4 15*s.* 4*d.* (for boots, linen, brushes, &c.) His pay is now 2*s.* 1½*d.*; and he liquidates his debt by paying 6*d.* a day. This will take, of course, about six months to accomplish, during which time, and longer if necessary, he is being drilled. Immediately on joining, he commences his duties, which are (copied from the Drill Corporal's account) as follows:—The *reveillé* sounds at 5.40 A.M.; the recruit dresses for stables; 6 to 7 stables; 7.15 breakfast (pint of coffee and part of his bread). He afterwards gets himself and his horse ready for riding-school; 8, 9, or 10, goes to riding drill for one hour; returns from school, is allowed proper time for changing his dress, then goes to the stable to clean his horse; 12, stables until 12.45; 1 P.M., dinner (¾ lb. of meat, and potatoes and bread). Afterwards gets his accoutrements and himself ready for foot drill; 2 or 3, goes to foot drill for one hour; 4.15, attends the regimental school for one hour; 5.15, tea (pint of tea and part of his bread); 5.45, stables for one hour; 10 P.M., watch-setting; goes to bed. In the three regiments these duties vary very little, and generally go on for ten months, sometimes twelve or eighteen, seldom under nine, when the recruit is turned out a trained soldier.

Let me now draw attention to the kind of training which he undergoes during these ten months. This youth, usually a laborer, has to be in stables at least four hours and a half daily; and he can call about four hours out of the twenty-four his own. He commences stables *immediately* after getting up (6 or 7 A.M.), or one hour before he has anything to eat. I do not object to the actual number of hours in the day of stable duty; but I have no hesitation in saying that the atmosphere in the troop stables (especially at that hour) is very detrimental to his health. The stench from the urine, bedding, &c., breathed for that hour (before breakfast), is injurious to the respiratory organs, and not unlikely to sow the seeds of disease, particularly when combined with the man being overheated and then suddenly chilled. It may here be asked, why this badly-ventilated stable? Bad construction, and overcrowding of horses. Want of money to remedy the evil is, I believe, the *usual* answer.

Under these circumstances, then, it behoves us to find out how as far as possible to provide good food for the lungs as well as for the body, and further to acclimatise the young soldier, as it were, to withstand the bad effects of such duty. With the mode of ventilation in the stables I do not feel justified in interfering; but with regard to the sleeping apartments of the men, it appears to me that in the troop rooms ventilation is carried to a foolish extent—I mean carried to draughts. It is not surprising that a man, finding cold air rushing in upon him through a ventilator close to the head of his bed, should stuff his over-alls across it, thereby stopping the ventilation of the whole room. Again, I have seen ventilating shafts through which the rain poured down! In addition to this not very unreasonable way of getting rid of a cold draught, we must bear in mind the class from which soldiers are derived—a class not much addicted to habits either of cleanliness or ventilation; therefore we ought to *ensure* ventilation where there are large bodies of men assembled, and avoid draughts.

If we reflect upon the life of the recruit as described, we must allow that it is one which is likely to develop the slightest inherent taint of disease. I am led to conclude, from my experience of cavalry soldiers, particularly in the Blues, that there is more mischief done in the first twelve months than at any other period of the soldier's service. The scarcity of recruits for the general army is closely connected with these evils. When the soldier is discharged, with a broken down constitution, and yet young, he is seen by youths and looked upon as an object of pity. It is not very likely these young men, unless they are what is called hard driven, will enter a service with the prospect of such an ending.

I have said that the recruit, on joining, is a healthy, well-made youth; and that every effort should be made to still further strengthen his constitution, to acclimatise him, and enable him to ward off vicissitudes of temperature, atmosphere, and duties. Let the recruit be taught his foot drill first, allowing him to attend stables only for one hour (mid-day); and, in addition to his foot drill, let him go through an entire course in the gymnasium, and attend the regimental school regularly (not attending the gymnasium in lieu of the school, as in some regiments). When he has thus completed his foot drill, I think it will be found that he has increased in muscular development, that his chest has expanded, and altogether he is in an improved condition, ready to vault into his saddle, less likely to contract, and more likely to get sooner over, any unavoidable attack of disease. So far, say, to the end of the first year. He is now a trained soldier, with perhaps a shilling a day to spend. What do we do now for his leisure hours in the heart of a great city like London? I fear in a great measure it must be answered—Trust to Providence and the surgeon of the regiment.

Under the present *régime* the soldier frequents pothouses, eating, drinking, and smoking bad articles, and passing much of his time in the society of dirty women. Disease is thereby induced, for which he is treated in hospital under all the difficulties of a constitution weakened by bad training. What, then, ought we to provide? I think it will be found that after the recruit has gone through a regular course of gymnastics, he will very frequently amuse himself in the gymnasium; and a furtherance of this healthy exercise should invariably be encouraged in every regiment (I am aware it is generally done, but I fear is not properly encouraged), by awarding prizes, by much more frequent competition for excellence in single-stick, sword practice, &c., &c. A good, well-lighted, and well-ventilated reading-room should be provided with daily papers and periodicals, with permission to the soldier to smoke, and enjoy a limited quantity of beer or a cup of coffee. In this room occasional lectures on scientific and amusing subjects should be given. I would also encourage lessons in dancing, and allow weekly parties for all men attaining the rank of non-commissioned officer. I should also recommend accomodation to be made for trades, so that the soldier may occupy his leisure hours for the benefit of his wife and family, and also with the view of exercising it when he has left the service. In addition to this, he should engage in the games of the season, such as rackets, cricket, foot-ball, &c. By these and good moral training, in which I should hope to be joined by the chaplains, I doubt not but that the army would become a profession, not a refuge. Regarding the encouragement for trades, an excellent paper was read in the United Service Institution. This suggestion I had made some twenty years ago to the Army Medical Department, with the view of diminishing vice in the army and encouraging enlistment. I *then* suggested also, as a further inducement for the good conduct of soldiers, that a new regiment should be raised (of Guards, styled the "Albert Guards") from the Line, composed of well-behaved men, to serve, with increased rank and pay, around the person of her Majesty.

Although I have confined myself as much as possible to the Household Cavalry, I cannot help hinting that similar changes might be made in the Cavalry of the Line; and I say so with some certainty, as I have received, through the kindness of Dr. Watt, late of the 15th Hussars, the daily duties of the recruits in that regiment, and I find there is very little difference in the system of training recruits from that pursued in the Brigade.

In conclusion, I would suggest that, when the weather and light will permit, the horses should be exercised (watering order or otherwise) at the morning stable hour, and only a few men should be left to clean out the stables.

It may be remarked now, by some, "Your statements may be all very well; but it is an impossibility to carry out the duties of a regiment under such alterations." I am in a great measure aware of this; but I have ventured my suggestions entirely on the grounds of health, and I hope may be excused in still further pointing out ways and means for carrying out those alterations. In the Household Cavalry our troops are very small, and, in my opinion, fewer non-commissioned officers would be beneficial; that is to say, depute corporals (only probationary rank) to clean their own horses. In the general army more men ought to be added to each troop, *dismounted*, but *trained cavalry soldiers*, ready *at all times* to be called on service on an emergency; but if economy is to be the order of the day, fewer horses per troop would make up the differenee.

Cavalry Barracks, Windsor, Sept. 1869.

◆

SUCCESSFUL OVARIOTOMY PERFORMED IN THE FOURTH MONTH OF PREGNANCY, AFTER RUPTURE OF THE CYST AND PERITONITIS.

By Henry Bateman, F.R.C.S. Eng.

Ovariotomy has now succeeded in so many instances that it has fairly taken rank as a capital surgical operation, offering fairer hopes of recovery than amputations of the limbs. Individual cases of this operation have, therefore, scarcely a claim for separate publication unless they either occur in some country where it has still to make its way in general estimation, or in which some special circumstance exists to invest it with unusual interest. Such was the case in the following instance.

A married lady, thirty-six years of age, the mother of eight children, first consulted me on the 23rd of last July. On examination, I found her to have an ovarian tumour of the right side, ascites, pregnancy of about three months' duration, and extensive recto-vagina, protrusion. When twenty years of age she had twins; and, after the delivery of the second child, a tumour was discovered in the right iliac fossa, which at first gave rise to the idea that she had a third child. The mistake was soon discovered, and she had a good recovery. From this time swelling of the abdomen increased very slowly during the next sixteen years, and occasioned almost no disturbance of the system until about a fortnight before my visit. She had then a sudden attack of abdominal pain and tenderness, with sickness, and fever, followed by a marked and rapid increase of the abdominal swelling.

The case was full of peril when I was called in, for although the abdominal tenderness was subsiding, the effusion was increasing. There was considerable difficulty of breathing on lying down, and great restlessness, with scanty and deep-colored urine, abounding in lithates.

Having suggested the propriety of consulting Mr. Spencer Wells, he saw the case with me, and entirely concurred in my diagnosis as to the presence of an ovarian tumour, with free fluid surrounding it in the peritoneal cavity, and depressing the recto-vaginal pouch, and in the existence of pregnancy about the commencement of the fourth month. We also came to the conclusion that the fluid in the peritoneal cavity was ovarian fluid, the sudden attack of pain when I was first called in having been caused, in all probability, by the rupture of part of the wall of a multilocular cyst, and the escape of the contents of a large cyst. Pain, tenderness, raised temperature, rapid pulse, dry tongue, and sickness, all pointed to diffused peritonitis, and a condition requiring immediate relief; and we agreed to offer the patient the choice of early tapping the abdomen or removing the ovary, but recommended the latter, notwithstanding the special risks arising from her pregnant condition and the peritonitis.

The patient and her husband consented to the major operation, which was admirably performed by Mr. Spencer Wells, on the 14th of August, in the presence of Dr. Junker, who administered bichloride of methylene, Professor Neugebauer (of Warsaw), Dr Jagielski, and myself. The tumour, with its contents, and the fluid surrounding it, weighed altogether thirty-seven pounds. There was a general injection of the peritoneum, but no recent lymph. There was some omental adhesion, and one vessel there needed a ligature, which was left in the abdomen. The pedicle was secured by a clamp, and fixed outside the wound, which was united by interrupted suture. Mr. Wells was extremely careful to cleanse the peritoneal sac thoroughly of all ovarian fluid, by repeated sponging, before closing the wound.

The operation was performed a little after 6 P.M., and at 9.30 the patient had a pulse beating 96 in the minute, with a moist tongue, and a moderate amount of pain. A scruple of tincture of opium was injected, and fifteen minims given by the mouth, and citrate of potash given every three hours when thirsty, with ice occasionally. The following morning the skin was moist, the tongue clean, and the pulse 94. Barley-water only was administered as food, and the saline and opiate continued as required. In the evening the pulse rose to 100, and there was a good deal of pain in the course of the anterior crural nerve; but the countenance was good, and the patient cheerful. From this time I never found the pulse higher than 94, and four days after the operation it had fallen to 80.

On the 9th of August, five days after the operation, the sutures were removed by Mr. Wells, in the presence of Dr. Glover, who kindly took charge of the case a fortnight during my absence from town. A large portion of the wound was healed by the first intention.

The bowels were first relieved, after six days, by injection. Just prior to this, and coincidently with a return to solid food, there was a little vomiting. But the pulse remained quiet, and, under the gradual action of repeated enemas, the vomiting was relieved. Chicken and other simple animal food was given, and a small quantity of champagne occasionally.

On my return to town, twenty days after the operation, I removed the clamp, with the remnant of the pedicle. There were some flabby granulations at the upper end of the wound and at the site of the pedicle, which required a few applications of nitrate of silver; but the rest of the wound was well healed in about nineteen days.

On the the twenty-eighth day she left London for Ramsgate, in good health, and arrived there with very little fatigue.

Sept. 3rd.—The patient's husband has just returned from Ramsgate, where he left her well, and on Ramsgate Pier, in a Bath chair.

This case proves,—

1st, That ovariotomy may be performed successfully when pregnancy has advanced to the fourth month, without occasioning abortion.

2ndly, That recent peritonitis, consequent on a ruptured cyst and escape of its contents into the abdomen, is no bar to the operation.

3rdly, That both these together will not preclude ovariotomy by the hands of a skilful operator, when the patient is calm, trustful, and in all respects amenable to the directions of her medical advisers, as was the case in this instance.

Islington, Sept. 1869.

◆

MORBUS ADDISONII.

By Francis E. Clarke, A.B. M.B. T.C.D.

The obscurity attached to the uses and diseases of the vascular glands still renders them worthy of attention, as, notwithstanding the researches of Ecker, Kölliker, Œsterlen, Huxley, and others who have written on their minute anatomical characters and physiological functions, many of the theories advanced regarding them are but matters of conjecture. And although the discoveries of Dr. Addison concerning disease of the supra-renal capsules, followed up by the many cases recorded by Dr. Wilks and Mr. Hutchinson, have thrown much light on the subject, yet the relation between these organs and cutaneous discoloration being still a mystery, and the treatment as yet undetermined, reported examples of the diseases cannot be uninteresting. For this reason I subjoin the following.

J. C——, a married man, aged thirty-eight, was examined on June 4th by Mr. Flexman, who kindly gave me the particulars, and subsequently obtained me leave to make a post-mortem examination. The patient had been ill two years and a half, at first under medical supervision, but latterly he had had none, thinking himself in decline. Had been always temperate, and never abroad, or the subject of any acute illness. Since first taken ill he has complained of constant debility, anorexia, occasional cephalalgia and vertigo, with frequent fainting fits. Bowels pretty regular at first, but latterly very costive, the stools being yellow and extremely offensive. Urine high-colored, and passed in large quantities; skin of a very dusky smoky color about the arms, inside of thighs, palms of hands and soles of feet, around umbilicus and axilla. Elsewhere there was complete anæmia. The amount of leucocythæmia must have been excessive to account for this extreme pallor. He had never been the subject of either active or passive hæmorrhage. Lately complained of considerable pain about the epigastric and hypochondriac regions, extending to the lower part of the back, and for the few days preceding had appeared particularly affected in the right side during micturition. No tumour discoverable in left hypochondriac region or elsewhere. The day in question he had much bilious vomiting, and had passed an enormous quantity of high-colored urine. Mr. Flexman, with erudite fact, at once diagnosed it to be Addison's disease, and, from his extremely asthenic condition, judged nearly immediate dissolution to be pending—an opinion which was soon verified, as the man died early the following morning.

Autopsy.—Spleen normal as regards position, but of immence size, measuring 8½ inches in length by 5 in breadth, weighing 12¾ oz., of a dark-red, congested color throughout when cut into, and of extremely soft consistence. Kidneys very large and congested, much like those seen in the first stage of Bright's disease, the left being much the larger and softer of the two. The supra-renal capsules were very conspicuous, being of immense size and opaque yellow color, like adipose substance, and intimately bound down to the adjacent structures. The coats of the stomach were very thick and white, a good specimen of hour-glass contraction being present about three inches and a half from the pyloric orifice. Both liver and pancreas seemed to be of an unusually light color, but of normal size and position. All other organs appeared perfectly healthy.

The following case occurred under my own observation, a few notes of which I copy from my case-book:—

J. H——, a married woman, aged thirty-four, examined by me on April 21st. She had been confined seven weeks before, and subsequently suffered a severe attack of peritonitis; since which she has had abdominal pains, particularly referred to the right side, and extending back to the intra-scapular region. General and extreme anæmia; great languor and frequent fainting fits; cardiac and respiratory sounds normal; pupils normal. Sleeps pretty well except when disturbed by pain. Great discoloration is visible over the whole abdomen downwards, from a line drawn transversely about two inches above the umbilicus, and the whole appears much enlarged. The skin presents a dark coppery hue. Urine normal, sp. gr. 1018; neither albumen nor sugar can be detected. Quinine was ordered. Up to this she had been taking tonics at the instigation of others.

April 28th.—Pain now referred to both sides. Skin, if anything, of a darker color; the abdomen looking quite like that of a mulatto; hands now partially discolored. Ordered drop doses of creasote, with three grains of sulphate of iron, three times daily; the baby to be weaned, and every nourishment given.

May 4th.—Abdomen, which had been much swollen, is now reduced in size; discoloration the same; countenance less pallid; marasmus still present to a great extent.

From this time she gradually improved. I saw her at the end of May, and the discoloration had nearly disappeared; in fact she believes herself nearly quite well.

I believe this to be another example of morbus Addisonii, but whether the symptoms will reappear or not as yet remains to be proved. There was here the same evidence of splenic disease, as regards constitutional symptoms; but no physical sign was present, rendering its existence doubtful.

Dr. Hughes Bennett has shown that enlargement of any of those glands which he designates the lymphatic glandular system produces leucocythæmia; but certainly splenic enlargement is in general its cause, as demonstrated by Virchow, he even having distinguished by a different name the few cases of leucocythæmia which are independent of this disease. It would be interesting to know if splenic enlargement generally accompanies supra-renal disease. If the amount of leucocythæmia is as great in every case of it as in the foregoing, I should rather imagine it did; the spleen at all times affording the largest medium for the multiplication of blood-cells, and, *a fortiori*, when diseased, a proportionably larger one for their increased multiplication and "corresponding diminution in the formation of free nuclei, and consequently of colored corpuscles." (Dr. Hughes Bennett.)

Splenic enlargement does not, however, give rise to the cutaneous discoloration as in that caused by hepatic cirrhosis or "ague cake." Although there is a considerable amount of splanchnæmia, the former is not present, being merely dependent on supra-renal disease, as shown by Dr. Addison. The cause of the discoloration still remains a mystery. I have remarked that it is most conspicuous in those regions where the sudoriparous glands are most numerous. Can there be any relation between them? Secondly, if their natural excretion were thereby retarded (which would account for the renal congestion I remarked in the post-mortem examination, as well as for the renal symptoms during life), the quantity of the white corpuscles being in excess at the same time, might not this give rise to a pigmentary deposition in those same localities on the rete mucosum?

As to the administration of creasote, I can only speak from the experience of this one case, where, in combination with sulphate of iron, it appeared to produce considerable good effect. I would certainly recommend its employment.

South Molton, June, 1869.

◆

A CASE OF POISONING BY CARBOLIC ACID.

By W. H. Barlow, M.D.,

Hon. Medical Officer to the General Hospital and Dispensary for Sick Children, Manchester.

On the 20th of July, 1869, I was called upon to make a post-mortem examination of the body of one Alfred K——, then lying at Garratt-street, in this city, awaiting a coroner's inquest. The history of the case was briefly that, on the previous evening, about 4.30 p.m., the deceased, who had been drinking heavily for some days, was lying asleep upon a settle in the back kitchen, when his daughter, the only other person in the house, stepped out to hang some clothes on a line in the street. While so engaged, and but a very few seconds after quitting the place, she heard a noise as of a fall, and, upon returning, found her father upon the floor, as though he had fallen from the settle; frothing at the mouth, countenance turgid, and quite speechless. The neighbors were called in, and a medical man was sent for; but before his arrival (which was in the course of a few minutes, certainly not ten) the man was dead.

Upon the hob, close by the settle, was a bottle containing a small quantity of some fluid, which had been given to him several weeks before, by some person unknown, to sprinkle upon the floor, in order to drive away cockroaches. The quantity contained in the bottle was stated to be not more than an ounce; but the bottle and contents had been thrown away by one of the daughters. (The broken fragments of a bottle, said to be the same, were fished up from the midden; but no trace of contents nor any odor but that of the fæcal matter in which they had been imbedded could be detected.)

Autopsy, twenty-five hours after death.—The body was that of a man of about sixty years of age, and was found to be discolored, and the superficial vessels gorged with dark blood; the face and neck especially were much discolored. Rigor mortis had not commenced. Inside the lips, the tongue, palate, and throat were whitened and hardened, evidently by the action of some caustic; but the peculiar odor of carbolic acid was but faint, not being noticed until it had been detected in the stomach. The vessels of the scalp were gorged with dark blood; but the brain was singularly free from any sign of congestion, rather, pale and bloodless. Scarcely any fluid in the ventricles, merely a moisture. The lungs were quite crepitant, free from any sign of disease, but full of dark blood. The heart was pale and fatty, quite empty; the interior of the left ventricle was stained a bright-red color; the valves were healthy. The liver was large and fatty, normal in other respects. Gall-bladder full; but not distended. The stomach was contracted, and firm to the touch, not much larger in diameter than the transverse colon. It was removed with its contents for further examination, with about 4 in. of the œsophagus. The intestines were reddened along the whole superficial surface, but nothing abnormal was detected upon opening portions of the duodenum, jejunum, and ileum. Bladder empty (urination and defecation had taken place before death). The kidneys and spleen were healthy, and of the normal color, but next day (forty-eight hours after death) the kidneys had become very dark colored, almost black. Upon opening the stomach, about an ounce of turbid, pinkish fluid, smelling slightly of carbolic acid, and giving a strong acid reaction with litmus paper, was removed. The coats of the stomach were very much thickened, and the muscular coat contracted very strongly, raising the mucous membrane into ridges towards the cardiac end; these ridges were high, hard, whitish on the summit, but pinkish in the furrows, and had somewhat the appearance of a finely injected preparation. The œsophagus was affected in a slighter degree. The mucus was in masses, white, and loose, coming away with a touch; but the mucous membrane seemed to have escaped in a considerable degree. The pyloric extremity of the stomach was pinkish, but soft and comparatively unaffected; and in the intestines there was no trace found of the severe local effects of the acid. To the coats of the stomach the acid seemed to cling, rather than to be mixed up with the contents; and though the odor was slight in the latter, it was very strong in the stomach itself, and when this was placed in a weak solution of the same acid for preservation, it rose to the surface, in large oily globules. The appearance of the mucous membrane is most extraordinary and characteristic, and resembles nothing so much as the ridges upon the palate of an ox.

From a consideration of these facts, I am led to infer that the man, upon waking from his slumber with the raging thirst so likely to follow a debauch, saw the bottle near him and mistook the contents for spirits, and the fluid, entering an empty stomach, seized upon and corrugated the coats of that organ in the manner before stated, and the consequent shock and depression caused almost immediate death. The quantity swallowed could not have been large (probably not more than a tablespoonful), or it would have affected the whole or greater part of the stomach, whereas it was confined entirely to the cardiac extremity.

Manchester, August, 1869.

CASE OF SPINA BIFIDA SUCCESSFULLY TREATED BY LIGATURE.

By Edward Sidebottom, M.R.C.S. & L.R.C.P.

I was summoned on the 8th September, 1866, to attend Mrs. D——, of Hollingworth, in her third confinement, who, after a long and tedious labour, was delivered of a fine full-grown male child, about the usual size and weight, apparently healthy and strong. I soon discovered that the infant was suffering from bifid spine in the lumbar region, the tumour being about the size of an orange, tense, fluctuating, and of a pale-purple color.

I made known to the parents the danger attending such cases, and suggested that I might have resort to some operation for the removal of the tumour, or try ligature. I came to the conclusion to adopt the latter course; and in two days after its birth I placed a ligature of silk thread round the neck of the tumour, tightening the ligature only slightly. The following day I passed another (also of silk thread), without removing the first. This appeared to produce a good deal of irritation, causing several clonic convulsive attacks for several hours during the day, but which passed off in the evening. The next day I passed a third ligature (silk thread), not disturbing the two former ones, and using more constriction,—still without causing more convulsions, but leaving the child fretful. The three ligatures were all kept on until the tumour sloughed off, which did not happen for three weeks, leaving only a very small wound, over which I applied a piece of dry lint, using gentle pressure. In three days the wound had perfectly healed, leaving the child's lower extremities partially paralysed. After a few days cold water was applied by means of a sponge along the whole course of the spine, daily, with marked benefit, the paralysis disappearing by the end of three months.

The reason I have not reported this case sooner is simply that I might watch my little patient for some time to see if any new symptoms would develop themselves; but now that three years have elapsed I consider him out of danger. The little fellow is strong and healthy, and can run about as well as any boy of his age. In the course of my obstetric practice I have had many cases of spina bifida, in some of which I have used the remedies generally recommended, such as support by trusses and bandages, and puncturing the tumour. Others I have left to nature, some of which lived a few months and one five years. But I must confess that for many years I have had the idea that ligaturing the tumour in certain cases might be of service. I have often mentioned it to many of my medical friends, from whom, however, I have met with but poor encouragement. But the nearly always unfavorable result of repeated puncturing, pressure, &c., and in this case the child being well nourished and strong, led me to adopt this plan of treatment, which, I am happy to say, has proved a perfect success. Foresters in the first instance, and Benj. Bell more recently, advised the application of ligatures round the base of the sac, provided the disease be local, and a mere distension by fluid in consequence of the imperforation of the bones, and not a disease of the spinal marrow or membranes, and it be not complicated. It does not appear that either of them tried it. Erichsen (vol. ii., p. 215) says he has "never known any but a fatal result follow the removal of these tumours by ligature, scissors, or knife." Gross (vol. ii. p. 188) speaks equally discouragingly of the results, and I cannot find a case on record which has been treated successfully by this method. Dr. Nevins mentioned, at the Liverpool Pathological Society, in 1850, three cases in which puncture had been tried. One case was cured, the gentleman being then forty years of age; the second died; and the third was quite well at the end of three or four months, with the sac contracted. Dr. Hana has related a case in which spontaneous rupture of the sac took place after measles, and the child recovered. Cases have been cured by puncture followed by injection of iodine, as proposed by Dr. Brainerd. The present case was doubtless one in which the spinal cord had no, or only slight, connexion with the sac. Ollivier states that when the disease is not complicated with hydrocephalus, he has generally found the spinal marrow traversing the sac unaltered; but if coexistent with hydrocephalus, or if the canal of the spinal marrow be distended with fluid, the cord may be flattened out, as it were, so as to apparently line the sac. The gradual compression by the tightening of the ligatures may have contributed a little to the favorable result in this case, and should another opportunity present itself to me I shall not hesitate to adopt the same course.

Mottram-in-Longdendale, Cheshire, Sept. 1869.

◆

A CASE IN WHICH A LIVE FISH FOUND ITS WAY INTO THE ŒSOPHAGUS, AND WAS IMPACTED FOR ABOUT SIXTEEN HOURS.

By W. Stewart, M.D.,

Surgeon 2nd Battallion 21st Fusiliers.

On the morning of the 8th of May, 1869, a native puckally of the regiment, named Chengamully, was brought to the hospital of the 2nd batt. 21st Fusiliers, in a state of great distress—suffering from intense pain low down in the œsophagus. There was much difficulty in breathing, and the patient was unable to swallow liquids or solids. He assumed a posture leaning forwards, as the attempt to stand erect caused more distress. The patient stated, as also the friends who accompanied him, that on the previous evening, while fishing at "The Lake," he caught a fish, which proved unusually lively, and, in order to extract the hook from its gills, he seized the fish with the fingers of the left hand and the hook with his right, and, with the head of the fish between his teeth, effected his object. He had scarcely done so, however, when the animal, with its long, sharp, dorsal fin, pricked the palm of his hand, causing him suddenly to let go his hold, and involuntarily to open his mouth at the same time, when the fish bolted down his throat; and although he grasped it by the tail in its descent, and squeezed his pharynx with the other hand, all his efforts were ineffectual—the fish made its way to the position above described.

A live specimen of the kind of fist impacted had been brought to the hospital by the man's friends for inspection. It was about the same size, and caught the same evening. It appeared to be idencal with *Anabas scandens* (the walking perch of Ceylon), called by the Hindustanees here the sooma. This fish is remarkable for its power of locomotion on dry land (making long marches by means of its pectoral fins), and for the length of time it can live out of water. It is said that the fishermen on the Ganges will keep these fish in earthenware vessels without water for four days, taking them out to cook when required, when they are as lively as when first taken. The specimen under observation had been out of the water all night, and, on being touched or irritated, was able to walk with some rapidity. The fish was in length about four to five inches, an inch thick at the shoulder, and in depth about one inch and a half, including dorsal fin, as sharp as a knife standing up, fully one-half inch. The attempt to extract the animal with forceps, if such had been at hand, would have failed, and in all probability would have caused serious injury, owing to the sharp dorsal fin, which, when erected to its full extent, inclines towards the tail of the animal; the pectoral fins also inclining in the same direction. It was, therefore, decided to use the probang as the only alternative, and if possible push the animal into the stomach. Owing to the pain and spasm induced, a first attempt failed. On a second attempt the fish was dislodged, and I passed the probang fairly into the stomach, with but slight obstruction to the instrument. The patient shortly afterwards left the hospital, able to walk without the assistance of his friends, and relieved of all his distressing symptoms, and, beyond some pain on deglutition for some days afterwards, has since experienced no inconvenience.

Rangoon, June, 1869.

◆

CASE OF RUPTURE OF THE ŒSOPHAGUS; DEATH.

By John Griffin, M.D.

Mr. W——, an innkeeper, a healthy man, forty-nine years of age, after partaking at 1 p.m. of a luncheon of beef-steak pie, went, at 5 p.m., to a rent-day dinner, where he partook moderately of salmon, ducks and peas, a small piece of plum-pudding, three glasses of port wine, and half a glass of beer. Feeling sick, he went into the stable, where he retched violently three times, the last time feeling, as he expressed it, as if something "gave way." Becoming worse, he walked home, and I was summoned at 8.30 p.m. I found him walking about his house, in great pain about the epigastrium and region of the heart, cold extremities, and his face bedewed with cold perspiration. He said he wished to be sick, but could not bring anything up, and that the plum-pudding had, as usual, disagreed with him. I ordered him into a warm bed; and presuming from the spasmodic character of the pain, that his stomach was overloaded with undigested food, gave him an emetic of hot salt-and-water and mustard, the vomiting to be followed up by an antispasmodic mixture. At 10 o'clock I saw him again. He said he felt a little better, was warm, pulse 76, no difficulty of breathing, but had not been sick; great thirst. I then gave him two aperient pills, directed a dose of castor oil in three hours after, if necessary, and requested to be called if he became worse. At 5 A.M. I was summoned, and found him laboring for breath, pulse 125, great restlessness, and, strange to say, emphysema of the cellular membrane above both clavicles. On applying the ear to the left side of the chest, to which part he constantly referred the pain, it was quite evident that there was a large quantity of fluid of some sort in the pleura. At my request, my friend Mr. Grimbly was sent for in consultation. Enemas, &c., were used without any effect, and at 10 A.M. he died of asphyxia. His face was livid for some time after death.

At 7.30 P.M. on the same day, a post mortem examination was made in the presence of several medical friends. The body was healthy and well developed. Bowels tympanitic. The abdominal viscera were healthy, and the liver slightly enlarged, but not diseased. On removing the sternum, and opening the left pleura, a quantity of fluid, amounting to three quarts, resembling pea-soup, and containing a few pieces of peas and fish, was discovered; the lung was completely collapsed; the right pleura contained a quantity of bloody serum only. On carefully removing the stomach and œsophagus, a longitudinal slit, about and inch in length, was discovered in the lower part of the œsophagus, immediately above the diaphragm, through which portions of meat had passed, and, of course, all the fluids he had taken to quench his thirst, with the medicines, &c.

The case is a very peculiar one. There can be no doubt that the violent effort of vomiting had forced a large quantity of the contents of the stomach suddenly into the œsophagus, and thus caused the rupture. Two things, however, remain to be accounted for: the emphysema, and the little disturbance of the breathing for so long a period after the rupture into the left pleura. No lesion of the upper part of the pleura could be discovered. I may say that the coats of the cardiac orifice of the stomach were rather thin, and that there were two or three ecchymosed spots in that region.

Banbury, August, 1869.

◆

ON A NEW METHOD OF USING NEEDLES IN THE OPERATION FOR HARELIP.

By Lawson Tait.

I venture to bring before the notice of practical surgeons an improvement in this operation, which I believe to be one of importance. It is an operation which is performed principally for æsthetic reasons, and it is frequently marred in this respect by the ungainly scars which are left by the needles when used in the ordinary way; in fact, I have not yet seen a case in which this defect has not been marked. What I propose is, that instead of two or more needles being introduced transversely through the flaps, they should be used in this manner: Having made what incisions he deems requisite for the operation (and I may here say that I have abandoned all the fancy manipulations for the old-fashioned straight incisions, removing plenty of tissue), the surgeon is to introduce two ordinary sempstress's needles, armed [illegible] a few inches of silver wire doubled, through the flaps, in the form of a St. Andrew's cross; the point of each needle is to be introduced through the mucous membrane of the lip, about half an inch from the edge of the flap, and brought out at the middle of the incision, then introduced into the other flap at the point opposite, and brought out at the root of the ala of the nose. The needles cross in the middle of the wound. The flaps are to be carefully adjusted, then the heads of the needles to be pushed fairly into the lip, and pulled together by twisting the wires; the points of the needles are then to be cut off close to the skin, and the stumps retracted into the flaps. In this way nothing is left to "catch," and when the needles are removed, by untwisting the wires and pulling by them, there are no scars left.

In the last case in which I used this method the parents of the child, aged seven years, say that it is scarcely possible for a stranger to tell that the child had been operated upon, and in this case there was a complete and very wide intermaxillary cleft, which I had previously closed.

Wakefield, August, 1869.

A Mirror
OF THE PRACTICE OF
MEDICINE AND SURGERY
IN THE
HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—Morgagni *De Sed. et Caus. Morb.*, lib. iv. Procemium.

GUY'S HOSPITAL.

[PATHOLOGICAL DEPARTMENT.]

CASE OF ACUTE INFLAMMATION OF THE CEREBRAL ARTERIES DURING SYPHILIS.

(Autopsy by Dr. Moxon.)

The following case is one of great significance, both as regards the clinical fact of syphilitic disease of the brain, and as regards the pathological question of the relation of syphilis to arterial disease. Syphilitic node, or "gumma" of the brain is amongst the best attested diseases; but the evidence which should prove that syphilitic inflammations directly attack the cerebral arteries is as yet far from conclusive in its extent. Meanwhile the individual cases that have been published by Dr. Hughlings Jackson (*Med. Times*, 1866) and Dr. Moxon (Guy's Hospital Reports, 1867), although very few, are of a convincing character. The case which we are about to describe occurred in Guy's on July 31st, and is a very convincing example of acute syphilitic arteritis. The patient was a man, aged thirty-one, who was admitted July 29th, under the care of Dr. Fagge. He had suffered from syphilis, and had had headache for some months. He was seized at midday on the 29th July with an apoplectiform attack. He was found to be unable to speak, and this neither from aphasia nor aphonia, but because he could not move his tongue. He had great difficulty in swallowing. His lips were weak, and the saliva dribbled from his mouth. His right limbs were almost completely paralysed; the left were weak. The heart's sounds were natural. He died about twenty-four hours after admission.

On examination of the body, Dr. Moxon found on the middle of the frontal bone a node, quite recent, in the form of a round patch of the size of a shilling and one fifth of an inch in thickness; it was in the deep layer of the pericranium, resting on the bone; its deeper part was yellowish and opaque, and its superficial part minutely vascular; the bone itself was rather rough and porous-looking, and injected at the corresponding spot. This patch had all the characters of a syphilitic node on the bone. The surface of the cranium was uneven from older nodes. The dura mater was healthy. The arachnoid was rather thickened about the base of the brain and along the Sylvian fissure, but not at the vertex. Some of the cerebral arteries were diseased in a very remarkable manner. The basilar artery especially had its size increased greatly, and its color was of a milky white, so that for a length of three quarters of an inch it looked like a piece of boiled maccaroni; but its color was at points more opaque, and its surface rather more irregular. The right vertebral artery was very small; the left was proportionately large, and it was thickish and rather opaque and stiff. The change in the basilar artery was rather abrupt at both ends of the affected patch. On opening up the basilar artery, the channel was found to be continuous through it, but narrowed to half its natural size from the swelling of its walls. These were soft and fleshy, having all the qualities of firm lymph. The microscope showed that the lymph-like appearance was not deceptive, for the swollen wall of the vessel was composed of closely aggregated corpuscles having all the characters of inflammatory corpuscles; these were in layers between swollen remains of the proper coats of the vessel. Thus there was no doubt whatever of an acutely inflamed state of the arterial wall, and the correspondence of the lymph on the arterial wall with that in the pericranial node was marked enough. There were two spots on the left Sylvian artery showing the same remarkable inflammation in an earlier stage. The substance of the pons Varolii was swollen, and its parts indistinct as though running into each other, yet no breaking down had actually occurred; section through it showed, when submitted to a very feeble stream of water for a moment, a noticeable degree of softening on the left side more than on the right. The portion of brain corresponding to the left Sylvian artery was rather soft. The other organs of the body did not yield any point worthy of notice.

Dr. Moxon considered the occurrence of so acute a form of arteritis as in itself very interesting and very important. The disposition at present, he thought, is too much to regard all changes in the arteries as of a chronic and degenerative kind. When the inside of an artery is found defaced by atheroma and cartilaginous thickening, this is set down as the result of senile atrophic changes. Such chronic and degenerative changes are even commonly held to be the cause of aneurisms. He believed that this view of arterial pathology is very far from being correct. As to aneurisms, they often occur in young people, and the softened and thickened tracts of the arterial wall that accompany the aneurisms are found, on microscopic examination, to be infiltrated with inflammation corpuscles; so that, in short, many aneurisms, if not all, are accidents of arteritis, So, too, he believed that the deformed senile arteries, that were viewed as degenerate, may be in many cases at least not degenerative and progressive, but rather remains of bygone inflammation of the arterial coats, corresponding to old thickenings of the pleura, periosteal nodes, &c. This is not a new view, at least as regards the inflammatory nature of arterial diseases. The presence of inflammatory corpuscles in the walls of these arteries has been asserted by numerous observers, especially in Germany, and Dr. Moxon has verified the presence of these corpuscles in many examples. But the arteritis in the present case differed from the ordinary forms of thickening of the arteries. It affected all the coats, and the amount of the lymph formation was very unusual. The occurrence of this remarkable arterial disease along with periosteal nodes in a syphilitic patient is another important instance establishing the power of syphilis to cause acute disease of the arteries.

WOUND OF APEX OF RIGHT LUNG; HÆMOPTYSIS; EMPHYSEMA; RECOVERY.

(Under the care of Mr. JOHN BIRKETT.)

WOUNDS of the lungs are not often seen in civil hospitals. The following case is especially interesting on account of the *site* of the wound and its *direction*. Inflicted with a sharp-pointed instrument, there were no circumstances unfavorable to a rapid healing of the wound; and the question as to the propriety of closing its edges, or leaving them apart, is well illustrated by the happy result of this case. But the proximity of the wound over large bloodvessels rendered it probable that either the subclavian artery or vein might have been cut, especially as the girl stated blood flowed freely at first. Probably, however, the knife was diverted by the clavicle obliquely backwards, instead of downwards, and so, passing over the bloodvessels, it punctured the apex of the lung only.

A healthy girl, seventeen years old, was admitted one evening in April last, on account of a stabbed wound of the thorax, a little above the right collar-bone. The injury having been inflicted during a broil, there was some difficulty in obtaining correct information on all points. The girl said she was not aware of the wound having been inflicted till she saw the blood flowing. A sharp-pointed clasp knife was the weapon used. When admitted, one hour after being hurt, she spat blood. The wound, half an inch in length, was close to the upper border of the centre of the right clavicle; its long axis was slightly oblique to that bone. The blow was probably delivered from above, and, perhaps, impinging against the collar-bone, was directed downwards, thus avoiding the subclavian artery and vein. There was slight difficulty in breathing, and the respiration was hurried. A piece of dry lint was strapped over the wound. The girl said she had lost a good deal of blood, but there was little flowing on admission, and none afterwards. The wound was three-eighths of an inch long. The next day the respiration was 28 in a minute. She had passed a tolerably good night; the pulse was not affected except as regards frequency, being 100 per minute; and the surface temperature was noted at 99·4°.

Emphysema was perceptible around the wound. Its edges were united, but Mr. Birkett soaked a piece of lint in collodion, and fixed it over the part. Absolute repose was positively enjoined, and carefully carried out; for the patient feeling no pain, and scarcely inconvenience, could not understand the necessity for such restriction. Moderate diet was allowed. In the evening the respiration was less frequent.

On the third day the emphysema had disappeared. She had not coughed up any more blood, and in every respect she was progressing favorably. The registrar, Mr. Davies-Colley, observed that the right infra-clavicular region was more resonant than the left, but not tympanitic. Respiration in the right apex inaudible; on deep inspiration only slight tubular sound. No vocal resonance. The patient was kept perfectly at rest, and a gentle aperient was once given. The diet was more liberal as convalescence advanced.

On the twelfth day after injury there was no dulness on the right side of the thorax, but a marked deficiency of respiration at the right apex, and down the lung the respiratory murmur was mumbling in comparison with the left side. Posteriorly the quality of the voice was altered. The wound was quite healed.

A few days afterwards she left the hospital quite well.

◆

WESTMINSTER HOSPITAL.

INFLAMMATORY ŒDEMA OF THE LARYNX, ENTIRELY CONFINED TO THE SUBGLOTTIC REGION, WITHIN THE RING OF THE CRICOID CARTILAGE; TRACHEOTOMY, WITH GOOD RECOVERY AND CURE; CLINICAL REMARKS.

(Under the care of Sir DUNCAN GIBB and Mr. HOLTHOUSE.)

THE true nature of the disease in the following case could not have been understood without the means employed to effect an accurate diagnosis. A few years ago the case would have been set down simply as one of acute laryngitis; and had laryngotomy been performed instead of tracheotomy, the patient, according to the views entertained by Sir D. Gibb, would have had to wear a tube for the rest of his days—a misfortune which is obviated by the latter operation, as explained in the clinical remarks at the end of the case.

Henry S——, aged thirty, a sailor, was admitted Jan. 7th, 1869. He had been for some years at the "diggings" in Australia, and got wet to the skin several times. Two years ago he received several blows on the throat from the fist, which caused some hoarseness for the time, and he spat a little blood afterwards. Six months ago he caught a severe cold in India, and has been ailing ever since. The urgency of his present symptoms occurred quite recently, when he came under the notice of Dr. Corner of Poplar, who sent him to Sir Duncan Gibb on the day above-mentioned. At that time the dyspnœa was extreme, with noisy obstructive breathing, and a strangous, croupy cough; face flushed, as if suffering from pneumonia; great anxiety and restlessness. The voice was audible, yet it was an exertion to speak. He had an acute pain in the left side of the chest, and his pulse was extremely small and feeble. The structures about the neck were thin, and he had a large and prominent thyroid cartilage.

Laryngoscopy was quite easy, and caused no discomfort. The epiglottis was normal, and so was the entire larynx above the vocal cords. The glottis was fixed and motionless, and a little over a line wide at its posterior part. Beneath the left vocal cord a globular swelling was seen, extending across to the right side; it was of a deep pinkish-red, and was clearly acute œdema of the left subglottic space within the ring of the cricoid cartilage, from acute inflammation in that region. The vocal cords were of their natural color and appearance, but necessarily paralysed in their action by the subglottic disease; yet they were close enough to nearly meet and produce vocal sounds in attempts to speak. The space for breathing, however, being very narrow, and likely to become more so every hour, the patient was sent to Westminster Hospital by Sir D. Gibb, and at once admitted.

Tracheotomy was performed by Mr. Holthouse at 2 P.M. The operation was somewhat difficult and tedious, because the patient had frequently to sit up to get his breath, and the use of chloroform was quite out of the question. The relief was immediate and decisive; the cough and other symptoms at once improved, the severe pain in the side got better, and the pulse became stronger.

Jan. 8th.—Has progressed without an untoward symptom, and has taken more nourishment in the shape of beef-tea, brandy, &c., than he had done for the last three weeks. Can speak audibly and well, with his finger on the tube, and even without; but is prohibited from doing so. The pulse is good, but rather quick.

On the 9th the tube was taken out, and could not be reintroduced until the opening was a little enlarged. He went on tolerably well; and by the 19th was sitting up, and his voice pretty good. Has been taking iodide of potassium since the 11th. The subglottic œdema has somewhat subsided.

22nd.—Feels very well; voice stronger still; but, although he eats and sleeps well, is getting thin. The medicine was therefore stopped, and cod-liver oil ordered.

By the 26th he was already stouter, never felt better, and was able to breathe upwards.

29th.—The laryngoscope revealed subsidence of the upper part of the subglottic swelling on the left side, a widening of the glottis, and slight action of the vocal cords. A little swelling was now seen low down on the right side of the subglottis, which was concealed by the left-sided swelling in the first instance.

Feb. 9th.—Breathes by the mouth for two or three hours at a time with his finger on the tube, showing that the passage is becoming clear upwards.

March 2nd.—Laryngoscopy with sunlight showed the glottis still wider, and the bright surface of the silver tube below it.

8th.—An abscess burst below the larynx, and several drachms of pus passed upwards by the mouth, with great relief to the breathing by the mouth. He continued to progress favorably after this, and left the hospital the first week in April, still wearing the tube. The weather was much against him, and he continued to pass a little blood and pus by the mouth for three or four weeks afterwards.

May 14th.—Is to sail before the mast on the 15th for Melbourne. Is now pretty well, and breathes upwards through the mouth for six or more hours at a time, with the tube stopped up by a cork. In the laryngeal mirror the glottis was almost wholly clear, except a little swelling at the posterior part of the right side of the subglottic space. He will still wear the tube as a precautionary measure at sea. A letter was given to him describing the nature of his malady, in the event of his requiring any medical assistance abroad.

Clinical remarks.—It is incumbent on us at the present day (said Sir D. Gibb), since our knowledge of laryngeal disease has become more accurate through the aid of the laryngoscope, to determine the real nature of the pathological forces at work in any case of acute inflammation of the larynx. If we find that the last condition has been followed by submucous effusion—and this is so in the great majority, if not in three-fourths, of the cases—then, for the safety of the patient, no less than for the determination of the operation to be performed, should such a measure become necessary, we must accurately diagnose whether the effusion or œdema occupies the upper or the lower division of the larynx,—in other words, whether it is above or below the vocal cords and the glottis which they form on approximation. If the upper part of the larynx is wholly or partially occluded by œdematous swellings, the result of supra-glottic œdema, following acute inflammation, we have evidence that the mischief is solely supra-glottic; and if it does not readily yield to the treatment pursued, a tube must be inserted in the neck below it to save life. On the other hand, if the upper part of the larynx is found perfectly free and uninvolved down to the vocal cords, as in the case recorded, and we can distinguish an œdematous swelling on one or both sides nearly obliterating the passage in the subglottic space below, to some extent filling up the ring of the cricoid cartilage, then immediate resort must be had to tracheotomy, for the loss of any time in treating the disease constitutionally is extremely hazardous. Under all circumstances, tracheotomy is the more suitable operation; for if the surgeon contemplates laryngotomy in such a case as that narrated, the tube will be plunged into the midst of the disease, which will then become hopelessly incurable, and the penalty resulting will be the necessity of wearing the tube for life. This risk is not so great in the supra-glottic form of œdema, because there the effusion is serous, and is readily absorbed; whereas, in the subglottic form, it is fibrinous, and become slowly absorbed, generally requiring a little constitutional assistance to effect it. In the great majority of cases, where a tube has been worn for years, it is the result of one of two causes; one, where it has been plunged into the crico-thyroid space into the subglottic disease itself; the other, where the tube is in the trachea, but the subglottic mischief has either remained unabsorbed, or has impaired the action of the cords, and produced a narrow glottis, from adhesions of some kind. The rule ought to become absolute—viz., when the diagnosis is clear, tracheotomy ought always to have the preference for reasons that must be apparent; and under any circumstances laryngotomy should never be performed when the laryngoscope has not been employed. My experience thus far has proved one important fact concerning œdema of the larynx, and it is that the two forms—the supra- and the sub-glottic—are seldom or never associated in any one case; and this only shows us the necessity of clearing up our diagnosis in every instance of laryngitis.

◆

KING'S COLLEGE HOSPITAL.

CASES OF SEPTICÆMIA.

(Under the care of Dr. Duffin.)

The following cases are intended as illustrations of that obscure but formidable condition which is still usually designated in our class-books under the indefinite heading of Septicæmia. The extreme scantiness of the information we at present possess, the great variety of symptoms and post-mortem appearances revealed by the different members of what our ignorance at present compels us to group as one family of diseases, and, above all, the terrible fatality hitherto observed to attend them, render it desirable that these cases should be more extensively recorded than they have yet been. Most men have observed instances of this kind, but their utter inability to explain or to connect them has for the most part led to their being cast aside. At present we have scarcely any fund of facts which can even act as a standard of comparison for us. The following cases are simply recorded, without any attempt at unraveling the difficulties they present. Whilst differing *toto cœlo* in almost every symptom, they will at least be recognised as belonging to the same class of disease. The curious pathological resemblance presented by the one to the stage of collapse in cholera, and by the other to the earlier days of typhoid fever, cannot fail to attract attention.

On the 11th December, 1868, a stout woman, twenty-two years of age, entered King's College Hospital, complaining of difficulty of breathing. She dated her illness back for about a week, previous to which time her wind had always been excellent. She also said that during the week she had had several fits of unconsciousness. When admitted, her hands were found to exhibit a deep cyanotic tint, her face and lips were blue and congested, and she was intensely cold, the thermometer indicating 96° F. A small quantity of blood was noticed about her gums. No pulse could be detected in any branch from the axillary artery downwards in either arm. From the common femoral downwards, also, all trace of arterial pulsation had ceased; and only a feeble impulse could be obtained in the carotids. The heart's sounds were in every respect normal, the impulse was firm, and the rhythm preserved; the number of beats was about 90. Even at the clavicles the first cardiac sound could be distinctly heard. The breathing over the whole of both lungs was so intense as to amount to puerility. No dulness existed anywhere. She had not passed urine since the morning, and the bladder was empty; but she said that up to the previous night the amount of secretion had been satisfactory. Her intelligence was perfectly lucid; but while her chest was being examined, three hours subsequently, she suddenly fell into a distinct epileptic fit. This was followed by severe coma, but after an hour her intelligence returned. After another half-hour, however, a second epileptic attack supervened, and she fell into a state of coma, out of which she never rallied, dying five hours after admission.

On post-mortem examination, the blood was found universally fluid. There was no embolism of either artery or vein. Hundreds of minute hæmorrhages, varying in size from a pin's-head to a marble, were scattered over the various serous surfaces—the lungs, mediastinum, substance of the heart, roots of great vessels, &c. The endocardium was much stained, but the valves of the heart were healthy. No inflammatory product was found anywhere. The lungs had collapsed well, their weight being rather below the average. The kidneys were fatty. The bladder contained some urine with a sixth of albumen, and some fatty and waxy casts, but no epithelium or blood.

R. C——, aged twenty-four years, a general servant, began early in May, 1869, to suffer from pain and stiffness in the ankles and wrists. These at the end of a fortnight compelled her to take to her bed. A general sense of prostration and languor now came on, associated with slight rigors and occasional epistaxis. The temperature ran up to about 101° F., the pulse quickened to between 90 and 100, and she was troubled with a good deal of nausea and almost daily vomiting. There was a total absence of typhoid spots, as well as of diarrhœa and abdominal tenderness. Her night's rest became very indifferent; but this was the only sign that gave rise to any anxiety. Thus she continued for three other weeks. During this time a peculiar flush developed on the face, of a full rose color, very irregular in shape, but symmetrical, and at first only present on excitement. After a few days this became permanent, the color deepened, and, without the original shape of the flush being in the least changed, it was evident that slight infiltration of the cutis existed over the spot. The cuticle, at first healthy, then scaled slightly over the more central part of this rash. When this efflorescence had existed about ten days, it was found that the redness was becoming dusky, and did not change on pressure. A few distinct circular islets of the same character had also formed about the circumference of the great central patch. Under these circumstances she was admitted into the above hospital.

June 8th.—Except this peculiar rash on the face, a little redness of the fauces, and a foul tongue, she seemed in perfect health. Nevertheless, the insomnia, which had scarcely allowed her an average of two hours' sleep each night for fully three weeks, and the dusky petechial character of the rash on the face, suggested anxiety. It was soon observed that her diurnal temperatures presented the most irregular variations, anywhere between 97° and 103°. A fresh burst of rash was observed on the left side of the chest, almost identical with that on the face, but occupying small distinct centres varying from the size of a pin's head to a shilling. All these were from the first distinctly hæmorrhagic. Still, all the general functions were performed normally. Menstruation set in on the 11th, and soon amounted to a painless hæmorrhage. Thus she continued till the night of the 15th, when, after a transient rigor, her temperature rapidly shot up to over 105°, her pulse amounted to 130, and she had severe vomiting.

The next day her countenance was indicative of extreme anxiety. Her tongue had become dry and tremulous; it required an effort for her to protrude it. She had almost universal muscular quivering. Extensive loose râles and rhonchi were audible over the whole chest, and the crepitus at the left base was almost fine enough for pneumonia. The urine for the first time was found to contain a trace of albumen. The intelligence remained perfect.

Two days later, on the 17th, all these signs continuing, loose râles became audible all over the chest, and there was distinct dulness at the base of the left lung. The daily variations of temperature exceeded four degrees, the evening limit always reaching 105°. General hyperæsthesia had come on, and there was a little nocturnal delirium. The number of the petechiæ had increased. The uterine flow continued. The following day she sank into coma-vigil, and died on the fifth day from the rigor.

Post-mortem examination.—In each pleural cavity there was a small quantity of serous pus, about two-thirds of a pint in the left pleura, and half that quantity in the right one. Some greenish, sticky, friable lymph was also developed at the base of either pleura. In the centre of the lower lobe of the left lung a small patch of pneumonic consolidation existed, and the rest of that lobe was carnified and tough. The lungs otherwise were extensively œdematous. The endocardium was much stained, the muscles generally very dark, and the blood universally fluid. The total absence of any trace of internal hæmorrhage, either in the interior of the organs, or on serous surfaces, gave rise to considerable astonishment. Peyer's patches were found in a normal condition, the spleen small, and all the other organs perfectly sound.

◆

ROYAL FREE HOSPITAL.

CALCULUS VESICÆ; LATERAL LITHOTOMY; SUCCESSFUL RESULT; WITH CLINICAL OBSERVATIONS ON THE MODE OF OPERATING.

(Under the care of Mr. JOHN D. HILL.)

IN a previous publication Mr. Hill has recorded a successful case of lateral lithotomy, which he performed by systematically dividing the operation into two stages; the following case is therefore reported as a further illustration of the same proceeding. Now the steps in the operation appear to Mr. Hill very satisfactory, and he remarks:—

"Although there is nothing new to consider as to the structures to be divided, or in the general procedure, yet this much may be said, that the operation is performed more rapidly, with greater precision, and with less manipulation of the soft parts. 1st. A direct incision is carried through the skin, fascia, fat, muscle, and urethra into the groove of the staff. 2nd. The knife, having been lateralised, is then passed fairly through the prostate into the bladder, the haft being kept well depressed, and the point firmly pressed against the staff in its groove. The entire wound is so freely and evenly made that the opening in the prostatic portion of the urethra corresponds to the apex of a cone, the base of which is completed by the external or skin incision. This funnel-shaped opening, with the least possible danger of extravasation, provides for the escape of urine until the vesical wound heals. Again, in case of hæmorrhage, whether it proceed from the superficial or deep parts, the various tissues have been so slightly disturbed (provided the calculus be of any ordinary size), that in the former case the vessels may be twisted without difficulty, while in the latter pressure can be safely and effectually applied around a tube which has been inserted through the wound into the bladder."

Numerous experiments upon the dead subject have been conducted by Mr. Hill with a view to ascertain all the practical points in lithotomy; and while fully estimating the difficulties and dangers occasionally attending every variety of this operation, he believes that, by dividing the lateral operation into two stages, it is rendered more simple and easy of execution than any other method, and yet equally safe and favorable to recovery. Now, the salient point in the operation is the insertion of the point of the knife into the groove of the curved staff, which has been passed into the bladder, and hooked well under the symphysis pubis. This may be effected by placing the forefinger of the left hand firmly upon the centre of the perineum; the staff is then to be slightly depressed until it can be distinctly felt to impinge on the finger, when it is again to be hooked up, the finger in the perineum following it. The handle of the staff is now to be transferred to a competent assistant, who should hold it firmly in a vertical position; next the knife is to be passed boldly into the groove of the staff, and the operation completed as previously described. The depth and extent of the incision must, of course, be regulated by the quantity of fat in the perineum and the size of the prostate.

In his early experiments, Mr. Hill used a gauged staff, and subsequently one with a bulb (fixed at the curve), to form a guide to the finger in the perineum. This, however, did not always answer the purpose, in consequence of the varying depth of the perineum. He, therefore, constructed a movable bulb to slide along the instrument to the desired point, where it could be fixed by means of a screw. These instruments answered very well; but further experience led him to dispense with all such innovations, and trust entirely to the length of the staff and its curve, and the finger in the perineum.

The particulars of the following case are extracted from Mr. Hill's note-book:—

George D——, aged twenty, was admitted into the hospital on Nov. 12th, 1868, with symptoms of stone in the bladder. About nine years previously he was first attacked with retention of urine, which necessitated his attendance at the Finsbury Dispensary, where an instrument was passed. He remained under treatment at this institution about five weeks (for the gravel); and was then discharged quite well. After this he suffered no further inconvenience until two months before his admission into the Royal Free Hospital. At that time he observed blood sometimes mixed with his urine, and at other times issuing from the urethra after micturition. Pain referred to the frænum preputii was the next symptom, followed by occasional difficulty in emptying the bladder, which latterly became so irritable that the desire to urinate was uncomfortably frequent.

On admission he was in tolerable health, although somewhat attenuated, and he was suffering from retention of urine. On introducing the catheter, a calculus was detected lying in the neck of the bladder, and plugging up the urethra. This was displaced by the point of the instrument, and the urine was withdrawn. The thoracic and abdominal organs were now thoroughly explored, with a view to determine his fitness for lithotomy. The urine also was examined, but failed to give any evidence of the salt which formed the calculus. Everything being favorable, after the bowels had been evacuated by a dose of castor oil, the rectum was finally washed out with an enema of oat-meal gruel; and, under the influence of chloroform, lateral lithotomy was performed, after the manner described, on the 14th of November.

The operation went off very satisfactorily; and the only point worthy of observation is as to the removal of the stone. From its shape it slipped away from the blades of the forceps, and, after two or three unsuccessful attempts to hold it, Mr. Hill set aside the forceps, and introduced a scoop. This enabled him to extract it without the least difficulty. Some hæmorrhage (prostatic?) occurred after the patient's removal to the ward; therefore the tube, with the petticoat attached, was introduced into the bladder through the wound, and plugs of sponge were inserted between the tube and petticoat, and the whole secured by tapes. All hæmorrhage ceased, and the urine flowed away through the tube until Nov. 17th, when the latter and its appendages were removed.

Nov. 20th.—To-day a small quantity of urine passed through the natural channel. The wound is very healthy, and the urine flows freely through it.

24th.—The urine now passes through both channels. The wound is healing.

30th.—The wound is rather indolent. Applied lunar caustic freely, and it is to be repeated every other day if necessary.

Dec. 10th.—The greater part of the urine now flows through the proper canal. The wound is slowly granulating.

20th.—Is improved. Believing, however, that the patient was not disposed to hasten his recovery, Mr. Hill took the precaution of having his knees and ankles fixed together with pads and bandages.

24th.—A few drops only have passed through the wound since the last report.

28th.—No urine has escaped by the wound since yesterday, and he will be discharged on the 30th.

The calculus is composed of oxalate of lime. It is tuberculated on the surface, the intertubercular spaces being filled with phosphate and carbonate of lime; and its weight is a quarter of an ounce.

◆

ROYAL HOSPITAL FOR SICK CHILDREN, EDINBURGH.

THREE CASES OF TRACHEOTOMY.

Dr. J. W. Paton, house-surgeon, has obliged us with the following cases and remarks:—

1. *Croup.*—(Under the care of Dr. Stephenson.)

J. J. S——, aged seventeen months, admitted September 18th, 1868. Since the 14th September he had been complaining of difficulty in breathing, accompanied by frequent, hard, dry cough and high fever. He had been attended at the out-door department, but his mother would not hear of tracheotomy, although this had been urged from the first, and four out of seven deaths in her family had been from croup.

On admission he was suffering from severe prolonged dyspnœa; face and extremities cold and blue. Inspiration greatly prolonged, and very little air entering the lungs. Tracheotomy was performed while in a comatose state.

After the operation, sponges wrung out of hot water were kept constantly applied over the opening of the tube for six days, so that a moist, warm atmosphere was inhaled. The temperature of the room was maintained at 70° Fahr. Two ounces of sherry were given daily, with milk and beef-tea *ad libitum*. During the first three days there was slight bronchitis; improvement, however, continued daily. The tube was changed for the first time on the fourth day; but on account of slight difficulty in breathing, it could not be removed altogether till the 18th of October. The wound healed quickly, and he was dismissed well on the 29th of October.

2. *Croup.*—(Under the care of Dr. Graham Weir.)—W. H——, aged four years, admitted October 5th, 1868. Since the evening of the 3rd of October he had been very feverish, and troubled with severe dry cough.

On admission he was breathing easily; respiration 24 to 30 per minute. Slight rhonchus over the upper half of left lung; no crepitation. Cough frequent, and brassy in character. He was ordered an ipecacuanha emetic, followed by twelve grains of grey powder in small doses, with Dover's powder; and one drachm of mercurial ointment was rubbed into the axillæ. Milk and beef-tea were given *ad libitum*, and poultices applied to the neck and chest. He continued to improve till the morning of the 8th, when he had two severe paroxysms of dyspnœa. On auscultation crepitation was heard over the left side, and slight sibilus on the right. Great dyspnœa demanded tracheotomy at 9 A. M. Oct. 8th.

During the operation, respiration stopped, and the pulse became imperceptible. After getting the tube in, and removing some mucus from the trachea, artificial respiration by Silvester's method was kept up for fully ten minutes before the livid pallor of the face began to disappear, and the pulse could be felt. He was then lifted to bed, and the same plan of treatment as in the former case resorted to.

Although the secretion from the tube was very copious, he continued to improve daily. On the evening of the 10th of October two tubular pieces of membrane, each about an inch long, were ejected from the wound in the trachea, while the tube was being changed. Great relief followed, and marked improvement continued till the morning of the 12th, when he got a chill, through the temperature of the room being allowed to fall below 60° Fahr. He sank under acute bronchitis, with general emphysema, on the evening of the 13th.

Autopsy.—The cellular tissue of the upper half of the body was emphysematous, and the tissues round the trachea were indurated. Both lungs emphysematous throughout. The bronchi were filled with purulent fluid, and their lining membrane was congested. In the bronchi of the second size there was a very thin membrane adhering loosely to their walls. The mucous membrane of the larynx and trachea was covered with a thick tough membrane, which completely blocked up the rima glottidis. Heart normal. Abdominal organs congested; otherwise normal.

3. *Diptheria.*—(Under the care of Dr. Graham Weir).—M. McD——, aged three years, admitted October 19th, 1868. She was brought to the hospital complaining of fever, cough, and dyspnœa. Until twenty-four hours before admission she had been in her usual good health.

On admission, the skin was cold and livid, and the lips of a deep-blue color. Pulse varying from 186 to 192, and very weak. Fauces congested. The uvula, both tonsils, and back of pharynx are covered with a hard, white, leathery pellicle. Respiration 64 per minute. Inspiration prolonged and dry. No rhonchus, but intensely tubular breathing over the whole chest. Ten minims of the tincture of iron were given in one drachm of sherry every hour, and the throat washed frequently with a gargle of the permanganate of potash. She had also milk and beef-tea *ad libitum*. Tracheotomy was performed as a palliative six hours after admission. Great relief and sleep were obtained. She died on the morning of the 21st, thirty-three hours after the operation.

Autopsy.—The tonsils, uvula, pillars of fauces, pharynx, interior of larynx, trachea, and bronchi, as far as could be traced, were covered with a tough white membrane. There was a small quantity of mucus in the bronchi. At the right apex there was some soft yellow tubercle, and at the base both lungs were congested. Heart normal. Blood fluid; only one small clot in right auricle. Liver and kidneys congested. The spleen was lying in a soft clot, adherent to it and to the mesentery. No rupture of the surface of the spleen could be detected.

Remarks.—In the first case, there can be no doubt that the life was saved by the operation, for coma had commenced, and death would inevitably have followed. In the second case bronchitis existed on admission over the upper half of the left lung, and from the easy condition of the patient it was hoped that by suitable treatment the bronchitis and croup might be arrested, and no operation required. This, however, was not realized, and the operation was performed under more disadvantageous circumstances on the 8th of October, crepitation existing over the left side. At first sight it would seem that no operation should have been performed under these circumstances; but the treatment in the first case (during the three days succeeding the operation, when there was bronchitis), and its result, led Dr. Paton to hope for a similar result in this one also. He thinks this was obtained, for the marked improvement till the morning of the 12th, showed that, if the bronchitis was not diminished, it at least was not increased. It was impossible, however, to tell whether the crepitation had advanced to the right side, on account of the mucous râle in the tube. In the third case the operation was performed as a palliative, not the faintest hope being entertained of recovery.

EVELINA HOSPITAL FOR SICK CHILDREN.

CASE OF MEASLES FOLLOWED BY DIPHTHERIA; DEATH.

(Under the care of Dr. Fagge.)

The occurrence of a diphtheritic attack after measles, or before it, is not so very uncommon, and is mentioned both in Hebra on Diseases of the Skin and in Reynold's System of Medicine. But taking these two cases together, the child and its nurse, as probably affected by a common poison, they are interesting, illustrating as they seem to do a large class, more commonly seen perhaps in general than in hospital practice. Numerous instances like the present compel one to consider whether the existing strict classification of fevers is correct; whether, in searching for specific germs, we may not have overlooked the varieties of soil, or the vigor of the seedling; whether, in other words, any one poison in different degrees of intensity, acting on the body in its varying conditions, may not be capable of producing other varieties of fever than that which is considered nowadays to be peculiarly its own; whether, indeed, different states of the recipients may not determine that a certain poison shall produce measles in one, diphtheria in another, pneumonia or pleurisy in a third, while in a fourth the factor from without, finding no corresponding internal factor, shall produce no appreciable result, or at most a result which may only be evidenced in after-years by an apparent insusceptibility to some poison. Whether this be so or not, a large number of so-called "fevers" in general practice cannot be classified, and the question is begged by calling them "febricula."

We are indebted to Mr. Goodhart for these notes.

Sarah C——, aged two, was admitted on July 1st for ecthymatous sores over the body and legs.

July 29th.—After the occurrence of two cases of measles in the ward, the child became hot and feverish, and was transferred to the fever ward, under the care of Dr. Fagge.

30th.—Trunk covered to-day with eruption of measles. It is neither so raised nor so livid as usual. She has a harsh dry cough, but no other catarrhal symptoms. She progressed well for four days, the temperature being at the outset 101°, with an evening rise of about 2°.

Aug. 2nd.—Morning temperature 100°; evening 100·6°.

3rd.—Tongue is again dry and glazed. She drinks fluids greedily, but refuses all solids. There is a firm, tough diphtheritic membrane covering the right conjunctiva, somewhat adherent.

4th.—Morning temperature 101·3°; pulse 128. Membrane on conjunctiva has re-formed; the cornea is yellow, as if suppurating. She still takes fluid well. No throat symptoms. Respiration fair all over chest. Urine is passed under her.

5th.—Morning temperature 102°; very restless, and will not take any nourishment; evening temperature 104·6°.

6th.—Morning temperature 102°; evening 102°.

7th.—Had a very restless night, and died this morning at 10.30 A.M.

At the inspection, five hours after death, the posterior part of the tongue and the soft palate and tonsils were covered with a uniform layer of yellowish membrane. This extended to the epiglottis, and lined the anterior surface up to its very edge; it did not extend over the margin to the laryngeal surface. The larynx was healthy. Glands beneath jaw were much enlarged, more on right side than left. The lungs contained a few patches of broncho-pneumonia, and there was some capillary bronchitis, but not to any extent. There was also some old disease in a small portion of one lung, consisting of cavities lined by a smooth membrane, and containing pus. The spleen was large, weighing two ounces and a quarter. Instead of the usual pulpy fever spleen on section, it was very firm, with no diffluent pulp.

Appended to the above is the following case:—

Anne M——, aged forty-four, nurse to Sarah C——, felt very ill on Aug. 8th, but, being subject to bilious attacks, she did not say anything about it. Towards evening she become so ill that she was unable to rise from her bed.

Aug. 9th.—Looks ill; tongue is thickly coated, and the breath very offensive; much pain and aching in all the limbs; bowels confined. Ordered an aperient mixture immediately, to be repeated four hours afterwards.—Evening: Temperature 104°; pulse 102. Much frontal headache and sore-throat. Is slightly delirious.

10th.—Morning: Temperature 102°; pulse 120. Much delirium during the night.

The patient was now transferred to Guy's Hospital, under the care of Dr. Moxon. Dr. Hilliard, the house-physician, has furnished the notes of the continuation of the case.

On admission: There is much headache; throat is sore, but better than it was; there is no injection of the fauces or membrane; temperature 101°; pulse 108; some pain in the right side, with a questionable pleuritic rub on auscultation; no dulness.

Aug. 11th.—Some cough, with expectoration of viscid mucus; decided pleuritic rub to-day beneath the right nipple, and now and then a little crepitation over the lower lobe of the right lung. No other physical signs. To take Seidlitz powder every four hours, and a saline aperient in the morning.

12th.—Crepitation is now fine, with rusty, viscid sputum; rub still audible. From this time the crepitation gradually extended up the front of the lung, and she began to improve.

◆

THE HOSPITAL FOR WOMEN.

A CASE OF PERI-UTERINE HÆMATOCELE.

(Under the care of Dr. A. Meadows.)

Cases of pelvic hæmatocele are sufficiently rare and interesting to warrant attention being called to the following example, especially as, notwithstanding that of late years much has been done in elucidating the diagnosis of these cases, it must be admitted that occasionally great difficulty exists in this respect. Fortunately, the treatment is, as a rule, comparatively simple, but undoubtedly much may be done by the skilful and judicious administration of remedies.

E. A——, aged thirty-three, was admitted into the Hospital for Women with the following history. The catamenia began when she was twelve years of age, and continued regularly for two years, when they ceased for several months, and during that time the patient was in bad general health. For this she was treated; the catamenia returned, but for four years were very irregular. Then, for two years, they were again regular, and at this time, the patient being then twenty years of age, she married, and soon became pregnant. However, she aborted at the fourth month, apparently from lifting weights. After the abortion much blood was lost. Six weeks afterwards the catamenia returned, and continued regularly for six years, when pregnancy again occurred, and this time the patient aborted at two and a half months, from the same cause as before. A sanguineous discharge followed for nearly three months. Subsequently the catamenia came on at irregular intervals of from two to six weeks. The patient remarked that, on those occasions when the flow was delayed, a good deal of pain was experienced in the hypogastric region, after which clots would pass with something like labour pains. In May, 1868, she menstruated much as usual. In June and July there was much pain in and about the pelvic region, but no catamenial discharge; and on August 12th, while sitting quietly at work, and having had no particular fatigue, she was suddenly seized with severe pain in the hypogastric region, extending through to the back, and gradually spreading over the abdomen. She was obliged to go to bed at once, and could not extend the legs for two or three days. Now and then crampy-spasmodic pains returned, and were followed by increased abdominal pain and tenderness, with occasional retching. The bowels were relieved with great pain.

On August 18th the catamenial discharge reappeared scantily, after an absence of three months. It lasted for five days, and was of a dirty-brown color.

She was seen by Dr. Alfred Meadows on the 30th of August, when the following note was made: Vagina hot, moist; cervix uteri small, soft; os small, circular; uterus partially fixed by a bulging mass behind and to left, pushing it forwards to pubes, and to right side. The mass in vagina had a doughy, semi-elastic feel, and was influenced by pressure externally. The parts were tender, but not acutely so. Pulse 90. Tongue a little coated. She was ordered to remain in bed, to have full diet, three ounces of wine and a mixture of the sesquichloride of iron, perchloride of mercury, and aconite.

On September 18th, it was noted that the uterus was somewhat more moveable, and the bulging less.

On the 23d, the uterine sound was for the first time cautiously used, and the uterus then measured three inches and a half.

On the 25th the catamenia reappeared for three days. The sesquichloride of iron was afterwards changed for the iodide of potassium, and iodine liniment was ordered to be rubbed in over the lower part of the body night and morning. The local symptoms continued to improve rapidly.

On the 4th of October a mixture of acid and bark was given; the patient was allowed to move about, and experienced no pain in doing so.

Ten days after this it was noted that the deposit, which had become much harder, was a good deal diminished in size. The uterus was anteverted, and still partially fixed, but nearer to the centre of the pelvis. She now rapidly recovered, and on Nov. 1st she was discharged from the hospital, there being then little or no deposit, and that could only be felt on deep pressure in the posterior cul-de-sac.

Dr. Meadows remarks that the chief interest which attaches to cases of this kind is in regard to diagnosis. There can be no doubt that in the case under notice, the immediate cause of the attack was the escape of some menstrual fluid into the peritoneal cavity, and the formation of a peri-uterine hæmatocele. This fluid probably found its way from the uterus along the left Fallopian tube into the peritoneal cavity, causing there, and in the pouch behind the uterus, the bulging which was felt when the patient was first examined. At first there would be some degree of peritonitis, by which the effused fluid would become encysted. After a time this is reabsorbed with more or less completeness, but it is very often the foundation of future evils by the formation of adhesions, which, in subsequent contractions, draw the uterus from its normal position, prevent healthy menstruation, and give rise to much local distress. Diagnosis in such a case is determined chiefly by the history, and has reference, 1st, to disordered menstruation—chiefly to delay, irregularity, and pain; 2nd, to the suddenness of the attack in connexion with such deviation; and, lastly, to the information obtained by a vaginal examination, especially in regard to the physical characters of the swelling, its degree of solidity, its situation, and relations to the uterus.

◆

ST. BARTHOLOMEW'S HOSPITAL.

A CASE OF SCURVY.

(Under the care of Dr. Duckworth.)

There is only one disease of which it may be truly said that we know not only its exact cause, but its certain remedy. Scurvy, it seems to us, deserves on this account more attentive consideration than it usually obtains. Content with our ability to cure it, we are apt to forget the very large class of disorders which are analogues of this, and of these we may hope to arrive some day at an equally satisfactory knowledge, guided by the study of the phenomena of scurvy. The following is quite a recent and well-marked case of this interesting disorder:—

A. W——, aged forty-nine, a blacksmith from a village in Buckinghamshire, was admitted into Luke ward lately, in a feeble cachectic condition, suffering from scurvy in a well-marked form. His complexion was muddy and sallow, and his body imperfectly nourished. On the legs were several large vibices, and some were seen on the inner surfaces of the thighs. There was marked stiffness of both knees, and some apparent thickening about the tendons of the flexors in the hams; also stiffness in all the toes. The gums were in a foul, fungating condition, and several of the teeth were loose. There were hardly any sound teeth in his mouth. The least pressure caused bleeding from the spongy protrusions, and so much pain was there that only "spoon food" could be taken. Nothing abnormal was detectible about the various viscera. The urine was natural.

His history was as follows: Owing to the discomfort experienced after taking any kind of vegetable food, he had lived from the beginning of this year on a diet consisting of bread and meat, with tea and milk. He positively ate no vegetables or fruit of any kind. For the last three months he had felt himself becoming weaker, especially when called upon to employ the hammer assiduously, and he had also felt pains in his legs. Next he observed small red spots to appear on the legs, and gradually his mouth became more tender. Lastly the large red patches occurred. He had been treated at home for disorder of the liver; but finding no improvement, he came to town to get advice.

He was ordered full doses of chlorate of potass out of bark decoction, with a diet of eggs, beef-tea, and milk, cabbage for dinner, and fresh lemonade for a drink. Some port-wine was also given. As no marked effect on the gums followed the use of chlorate of potass, they were ordered to be rubbed twice a week with solid nitrate of silver, in accordance with a plan found effectual by Dr. Buzzard, and recommended by him. This seemed to prove of considerable service, and the man became able to chew soft food again. The vibices faded away, and the joints became supple. He was next put on steel mixture. At the end of twenty days' hospital treatment, he was making rapid strides towards health. Dr. Duckworth described this as a case of land scurvy, rarely now met with. Professor Christison had described a series of cases like it which occurred amongst railway laborers some years ago at Hawick. These men were cut off from supplies of fresh provisions, and lived upon tea and farinacea, with a small quantity of animal food, and no vegetables. Scurvy broke out amongst them, and they were sent into Edinburgh for treatment.

◆

WEST LONDON HOSPITAL.

RETENTION OF URINE FROM CALCULUS; LITHOTOMY: RECOVERY.

(Under the care of Mr. Teevan.)

It would seem from Mr. Teevan's remarks, that the size, roughness, and peculiar hour-glass shape of the stone in this case accounted for its only advancing a certain distance in the urethra.

We are indebted to Mr. Adams, the house-surgeon, for the following notes.

S. H——, an emaciated, strumous-looking lad, seven years old, was admitted into the hospital at 11 A.M., April 10th, for retention of urine. On admission, he was in excessive pain; legs drawn up; great fulness in the hypogastric region extending rather above the umbilicus, accompanied with much tenderness. Has not passed urine for forty-eight hours. Tongue coated; pulse 132. The mother stated that he had not had a similar attack, and that he had never complained before. No history of stone in the family. Mr. Adams introduced a No. 4 silver catheter; but as it was interrupted near the neck of the bladder by a calculus, it was withdrawn. Chloroform was then administered to the patient, and with some difficulty the catheter was passed into the bladder, and upwards of a pint of urine drawn off. At 7 P.M. the same evening, the catheter had to be again used to relieve the distended bladder.

April 11th.—Urine had to be drawn off night and morning.

12th.—The catheter had to be again used to-day. Mr. Teevan attempted to seize the stone with an urethral forceps, but did not succeed.

13th.—6 P.M.: The boy was put under the influence of chloroform, and placed in the position for lithotomy, Mr. Bird holding the staff. Some little difficulty was experienced in introducing it, as the calculus was for some time firmly fixed near the neck. As the bladder was distended to about two inches above the umbilicus, Mr. Teevan allowed half the urine to flow away, and then extracted by the lateral incision a small oxalate-of-lime calculus, of the size and shape of two united peas.

May 1st.—To-day the boy passed, per urethram, a small oxalate-of-lime stone, weighing 6 gr.

23rd.—The boy left the hospital quite well, and not suffering from any incontinence of urine.

The difficulty experienced in introducing the rectangular staff, Mr. Teevan thought, was not owing to the peculiarity of shape of that instrument, but simply to the fact that its progress was for some time interrupted by the calculus, which was rather firmly fixed in the prostatic urethra. In accordance with his usual practice, he extracted the stone with his finger only, through a lateral incision, as there were no facts to show that there was any better incision for the removal of a calculus. After the operation, Mr. Teevan was unable to feel the second stone, although he was of opinion that it was in all probability concealed in the folds of a very large collapsing bladder.

◆

MIDDLESEX HOSPITAL.

RETROFLEXION OF UTERUS IN A SINGLE WOMAN, CAUSED BY LIFTING A HEAVY WEIGHT.

(Under the care of Dr. Hall Davis.)

The treatment pursued in the following case, and which was successful, was simple. Dr. Hall Davis tells us that he always adopts it in uncomplicated cases in the first instance, not resorting to local depletion on the one hand, nor to mechanical appliances on the other, unless the former is indicated as a primary measure, or the latter becomes unavoidable, which is less frequent in single women.

C. H——, aged twenty-six, single, was admitted into Prudhoe ward on February 8th, 1869. Complexion fair, habit spare, aspect feeble, stature medium.

Menstrual history.—Catamenia only appear at long intervals. They were present one month ago, and are always accompanied by much pain, referred to the lumbar and epigastric regions.

History of present illness.—Three weeks ago, after lifting a heavy weight, she felt as if something was suddenly displaced. She then had a sense of weight and dragging within the pelvis, with much pain in the sacral region, and obstinate constipation. Fourteen days ago she caught cold, which aggravated her sufferings, and soon after she felt obliged to keep in bed.

State on admission.—The tongue is furred, pulse quickened, temperature normal, chest sounds good; rectum pressed upon by fundus and body of uterus, which are displaced downwards and backwards into hollow of sacrum. The os uteri is displaced a little forwards; the angle of flexion distinctly felt at junction of cervix and body of uterus. Catamenia present, having returned yesterday. The uterine sound passes easily through uterine orifice downwards and backwards into the cavity of the displaced body. On rotating the sound, the womb is reduced into its correct position; while on removal of the sound, the uterus is again displaced into its former malposition of retroflexion.

Treatment.—The bowels are well cleared out, and kept free by gentle apperients and enemata. The uterus having been reduced by the sound, the patient was placed in the prone posture, and impressed with the absolute necessity of lying continuously upon her abdomen. Cold water injections into the vagina were practised daily. After three weeks' persistence in this treatment (the organ not being allowed to remain unreduced, if, as it did sometimes after action of the bowels, it became again displaced), she was permitted and enabled to walk about the ward without any recurrence of the malposition. She took, during the latter days of her stay, some tonic medicine, and left convalescent at the end of a month from her admission. She was enjoined to avoid making any strong efforts of lifting, &c., for some time to come, and to avoid constipated bowels. She returned twice subsequently for observation, when the uterus was still found in correct position.

◆

HOSPITAL FOR THE EPILEPTIC AND PARALYSED.

HEMIPLEGIA FROM DISEASE OF THE PONS VAROLII.

(Under the care of Dr. Hughlings Jackson.)

There is now in this hospital a case of some rarity. It is that of a woman who has symptoms implying disease of the right side of the pons Varolii—viz., on the right side paralysis of the muscles supplied by the fifth, sixth and seventh nerves; on the other, the left side, diminution of sensation in the whole half of the body. The arm of the left side is only a little weaker than the right; the leg is considerably paralysed.

A case very like this is reported by Dr. Hughlings Jackson in the second volume of the London Hosital Reports; and, subsequent to that report, an autopsy was obtained which revealed disease of the side of the pons on which side the face had been paralysed.

The case now in the hospital has special value, as illustrating Mr. Lockhart Clarke's researches on the relations of the conjoined nucleus of the sixth and facial nerves to the nucleus of the motor division of the fifth. It is not easy to understand how it happens that the parts supplied by the motor division of the fifth are paralysed on one side, and those supplied by its sensory division anæsthetic on the other.

◆

HOSPITAL PRACTICE.

THE TREATMENT OF ACUTE GOUT.

We subjoin a note of the treatment of acute gout as followed by physicians at some of the metropolitan hospitals. It is especially as regards the use of colchicum—a most ancient remedy for gout—that we have thought it interesting and important to glean these particulars. The special power of this drug in controlling the inflammatory phenomena of the disease is generally recognised, but its *modus operandi* cannot be explained. The researches of Garrod go to show that colchicum does not increase the amount of uric acid excreted by the kidneys, nor does it in all cases increase the quantity of urine. Yet the relief obtained by the use of this drug is in the experience of most practising members of the profession.

St. George's Hospital.

For the purposes of clinical instruction, Dr. Fuller divides cases of acute gout into two classes: namely, (1) cases in which the excretory organs are organically sound and functionally active—cases in which the attack of gout is due principally to excess and indiscretions of diet; and (2) cases in which the excretory organs are in some way disordered, and fail in performing their eliminative functions—cases in which the patient is not necessarily guilty of indiscretions of diet, but in which the liver and kidneys fail in their action, either as the result of functional disorder or of organic change in their structure.

The first class of cases correspond with those which pass under the name of sthenic gout: the tongue is usually furred, the urine loaded, and the bowels are commonly torpid. In these cases, until the acute symptoms have subsided, Dr. Fuller restricts the diet to liquids, administers a saline draught containing sulphate and carbonate of magnesia and a few drops of colchicum wine, occasionally gives an aperient pill containing calomel, aconite, and opium, and warps the joints in finely carded wool or in flannels steeped in a solution of soda and laudanum. As the acute symptoms subside, a more generous diet is permitted, and some light bitter tonic, such as tincture of gentian or calumba, is added to the mixture.

The second class of cases have more affinity with what has been termed atonic gout: the tongue is often clean, the urine clear—sometimes of low specific gravity,—and the bowels are regular. In these cases Dr. Fuller does not restrict the diet to the same degree; he allows a little meat without vegetables, and also, if desired, a glass of sherry or a little spirits and water. He acts freely on the skin by means of the hot-air bath; administers an aperient in the morning containing taraxacum and sulphate of magnesia, and during the day he gives a warm stomachic draught containing ammonia, and a few grains of soda in a light bitter infusion. Occasionally a dinner pill is prescribed containing rhubarb and a grain of colchicum; and in some instances, characterised by pale clear urine, a draught containing quinine, the mineral acids, and taraxacum, is substituted for the mixture just referred to. In these cases, as soon as the acute symptoms have subsided, a drachm of the syrup of phosphate of iron is given each morning before breakfast.

Middlesex Hospital.

In the treatment of acute gout, Dr. Murchison commences by clearing out the bowels with colocynth, blue-pill, and henbane, and then he relies mainly on alkalies and colchicum, the bicarbonate of potash and colchicum wine. With these he usually combines the nitrate of potash, and in private practice the patient is also instructed to drink lithia water. In rare cases, where there is irritability of the stomach, it may be necessary to subdue this by bismuth, magnesia, lime-water, and ice, with sinapisms to the epigastrium, before giving colchicum. The inflamed joints are covered with pledgets of lint moistened with laudanum, or with belladonna liniment and oil-silk, and the whole enveloped in cotton-wool. Opiates are not given, except in rare cases where the pain is protracted and severe, and not even then unless the bowels be well open, and the urine free from albumen. The patient's diet is restricted for the most part to milk and farinaceous articles.

Westminster Hospital.

Dr. Radcliffe thinks that, during the last twenty years, there has been a great change in the character of the cases of gout which fall under the physician's notice. The acute gout of old, he believes, is now rarely met with. It is much more common to meet with the subacute form—the form, that is, which is more nearly allied to rheumatic gout. Dr. Radcliffe does not employ colchicum. In a case of gout where some part of the foot is involved, he raises the limb to a height above that of the pelvis, gives diluents, iodide of potassium, alkalies, and no colchicum. Nor does he give purgatives. He diminishes the allowance of port wine and beer.

Charing-Cross Hospital.

Dr. Salter's treatment of cases of acute gout does not differ, in any essential particulars, from the general management of such cases; and the results are such as, in his opinion, to entitle the treatment to be considered successful. It consists of the administration of certain remedies, the prescription of certain dietetic and other management, and the application to the part affected of a certain local treatment. What he generally orders is a mixture containing iodide of potassium, bicarbonate of potash, colchicum wine, and decoction of bark. He regards as groundless, in the majority of cases, the fears that are so often expressed of the peculiarly lowering tendency of colchicum; at the same time recognising the fact that cases are sometimes met with which appear to be almost obsolutely intolerant of it, and others that bear it very ill. He thinks that it should always be commenced very cautiously and tentatively with those who have never taken it before. He is equally incredulous of the opinion that has been expressed by Dr. Todd and others, that colchicum tends to render gout more inveterate and more apt to recur.

Dr. Salter thinks it very important, unless the case is trifling, that the patient should be kept in bed, for the sake of the perfect physical rest, for suspending all wear and tear, and for getting some sleep by day in case the rest is much disturbed at night. He prescribes a light and simple diet—farinaceous foods made with milk, beef-tea, and fish. He does not by any means consider stimulants a *sine quâ non;* he very often gives none at all; and in cases where the patient's condition absolutely requires it, he prefers claret, or claret and potass-water, to anything else. Unless the pain is very severe and distressing by day, he does not give any sedative except at night, when he gives a sufficiently large dose to command sleep, whatever that dose may be.

Dr. Salter's local treatment—and this is the only thing that is at all peculiar—consists in the application to the affected part of a lotion consisting of a drachm of iodide of potassium, an ounce of bicarbonate of potass, and a pint of boiling water; to this he thinks a little opium may be advantageously added. Doubled lint saturated with this lotion is applied to the part affected, and covered with oil-silk; to that is put a layer of cotton-wool, and the whole swathed in a flannel bandage. The lint should be taken off from time to time, and re-dipped in the lotion. The relief that patients experience from this application is very great. With or without this lotion, there are three other things on which Dr. Salter insists in the local treatment of a gouty joint—perfect physical rest, protection, and preventing the part affected being too dependent.

Provincial Hospital Reports.

TUNBRIDGE WELLS INFIRMARY.

SMALL FATTY GROWTHS OBSTRUCTING CYSTIC AND COMMON DUCTS.

(Under the care of Dr. Wardell.)

A. S——, a well-formed female child, three years of age, became an out-patient of the above infirmary on Nov. 18th, 1868. It was reported that about three weeks previously she began to be jaundiced. Mr. Manser, the house-surgeon, visited her, and found the conjunctivæ exceedingly yellow, and the entire surface of a brownish-yellow tint. The pulse was natural; the skin cool. She made no complaint of pain in the head, nor were there any cerebral symptoms. The stools were of light clay color, and the urine of deep saffron yellow. She was ordered grey powder and rhubarb on alternate nights, and a mixture with nitro-hydrochloric acid and a bitter infusion. There was no improvement in her condition. The jaundice became more intense, and considerable prostration was experienced. On Nov. 23rd she complained of pain in the right side, which extended into the epigastrium. On the 24th she became comatose, and died on the following day.

Nov. 26th.—An inspection was made by Mr. Manser forty hours after death. The body was that of a plump, well-developed child. Skin generally very yellow. On carrying an incision down the mesial line, the white tissues were stained of deep yellow. Thoracic organs natural. On opening the abdomen, the convex surface of the liver was mottled with greenish-yellow and dark-brown patches. The parenchyma, when freely incised, exhibited considerable congestion, dark fluid gore following the knife. There was no partial enlargement of the organ. The gall-bladder was small and flaccid, and it contained some greyish sero-mucoid secretion, which was very unlike its ordinary contents. Situate at the junction of the cystic and common ducts was a small fatty growth of the size of a large horse-bean. On section, it was of yellowish-white, homogeneous, non-vascular, and gave a greasy stain to paper. The introduction of a probe showed the cystic and common ducts to be obstructed. The other abdominal organs were healthy.

The above case is one of great rarity, more especially as occurring in a child; and it presents features of considerable pathological interest. Congenital occlusion of the biliary ducts is sometimes observed, but in such cases the infant is jaundiced from its birth, and death generally ensues in the course of a few weeks. In this instance such had evidently not been the case. Jaundice in children, as in the adult, may come on from a great variety of causes. When it is seen in children, it is often from inspissated bile, which for a time blocks up the ductus communis, giving rise to colicky pains; and when the place of obstruction becomes free, the yellowness of the skin soon declines. It also eventuates from hepatitis, or when peritoneal inflammation extends from the intestines to the concave surface of the liver, and the tumescence constricts the ducts. Icterus in children is sometimes produced by summer diarrhœa. When, from improper diet, irritation is instituted in the primæ viæ, and the mucous lining of the duodenum is rendered tumid, it may be a consequence; and doubtless in some cases it is of mere spasmodic origin. It is occasionally the accompaniment of such chronic affections as general tuberculosis and tabes mesenterica, and of the fatty and amyloid degenerations; and an icteroid discoloration may come on in congenital cardiac disease, when the right side of the heart enlarges, and venous obstruction and stasis of the venous radicles render the liver congested, and the biliary ducts are interfered with in their functions; or when the common duct is pressed upon by some tumour, or from some obvious mechanical cause. In the above example the jaundice could be accounted for by none of these causes. The child had not labored under any dyscrasial disease; the assimilative functions had been normally carried on; it was well nourished, and became well developed. Palpation discovered no glandular disease, nor did the history throw any light upon the cause of this most prominent symptom, jaundice. In fact, the diagnosis was ambiguous and uncertain. The absence of bile pigment in the stools and its abundance in the urine proved that the secretion did not pass into the duodenum, but was absorbed into the circulation. The apyrexial condition, as evinced by the cool skin, slow pulse, and the gradual supervention of the jaundice, rendered it presumptive that some organic cause subsisted. Again, it was no form of infantile hepatic congestion, because the ordinary remedies did not produce increase of bile in the dejections, and as the case progressed the yellowness became more intensified. The inspection at once explained the morbid phenomena. It was remarkable that the gall-bladder was so small, and that it was partially empty. In the adult, when this very uncommon condition of permanent organic blocking up of the cystic duct has been discovered, the gall-bladder has generally been found greatly distended with serous fluid, and thus the organ has sometimes been seen the size of a large orange, or even of a child's head. In such rare cases a fluctuating tumour has been felt during life. When the obstruction is in the cystic duct *only*, of course there is no jaundice. By this absolute occlusion of the common duct, the lymphatics and hepatic radicles would take up more bile than could undergo the metamorphosis requisite for its elimination by the kidneys. In health, a very minute quantity of bile circulates in the blood, and when the bile acids (the glycocholic and taurocholic acids) and the pigment are transferred in large and abnormal quantity into the blood cerebral symptoms inevitably ensue; and we know, from experiments made upon the lower animals, that bile injected into the blood acts as a powerful poison, and that muscular tremors, convulsions, paralysis, and coma are amongst the more cognisable phenomena elicited by bile-poisoning upon the great nerve centres. Hence can be well accounted for the comatose condition of this little patient, which ushered in the fatal issue.

◆

SHEFFIELD PUBLIC HOSPITAL.

CASE OF MALIGNANT DISEASE ENCIRCLING THE THORACIC AORTA.

(Under the care of Dr. J. C. Hall.)

Mr. J. R. Algernon Taylor, house-surgeon, has obliged us with the following notes:—

W. F——, aged forty-nine, single, edge-tool forger, was admitted into the above institution on January 6th, 1869. He stated that he first felt *ill* in March, 1868; that while walking he felt a sudden lancinating pain in the left breast, which "doubled him up." He went home, and the pain continued a week; he then went to work a little, but has not been properly right since. His appetite failed; pain in the left shoulder-blade, shooting down the arm, producing numbness of the fingers. He then coughed up about a pint of blood, and was admitted under Dr. Hall.

On admission he was a cachectic, sallow-looking man, complaining of dyspnœa, dysphagia, and sickness. His food came up immediately, or sometimes stayed a little time in the œsophagus, and then came up. He frequently lost his voice for some days together; suffers continual pain in the left shoulder-blade, and can point exactly to the spot; numbness down the left arm. The radial pulse is much smaller on the left side than on the right. The whole of the left side of the chest is perfectly dull on percussion; no respiratory murmurs, and the dulness is most marked for about an inch and a half beneath the left clavicle. There is a systolic bruit along the course of the aorta, and also all over the front of the left side of the chest, but less plainly heard than along the aorta. Just above the left sterno-clavicular articulation is a hard solid tumour, situated towards the acromial end of the clavicle about two inches, and extending upwards half way to the chin. Beneath the sterno-mastoid muscle in the anterior triangle of the neck, it can be grasped by the fingers, but is quite immovable, and appears deeply seated in the chest. It does not rise with the larynx, and a bruit can be distinctly heard over it. No bronchophony, and no history of rheumatic fever.

On January 28th he coughed up another pint of blood; the dysphagia and dyspnœa about the same.

Feb. 1st.—The left radial pulse getting weaker; a little cough, with some œdema of the left hand and arm; appetite somewhat improved; dysphagia and dyspnœa also a little improved.

April 1st.—Left radial pulse imperceptible; œdema much increased; cough troublesome.

10th.—He says he does not feel so well this evening. Evidently sinking. He died at 5 P. M.

The body was fairly nourished; right lung healthy; no adhesions. The whole of the upper lobe of the left lung was replaced by a scirrhous mass, which was bound by strong adhesions to the parietes, extending upward about three inches above the clavicle, forming the tumour before mentioned, the sternal end of the clavicle being deeply imbedded in the mass. A small portion of the lower lobe remained, but was highly congested. The pericardium was firmly adherent all over, excepting the apex; left ventricle hypertrophied; slight cancerous deposit on aortic valves, the whole of the ascending aorta, the arch, and the descending aorta for about three inches, being entirely encircled by this mass, the vessel actually running through the middle of it. The trachea was also firmly attached to this huge mass. Some cancerous deposit was on the mucous membrane lining the trachea. All the other viscera were healthy.

No special plan of treatment was adopted in this case. The symptoms having been treated, the main object was to give relief. Dr. Hall having pointed out from time to time the probability that the disease was malignant.

Editorial.

THE CHOLERA AT THE GAMBIA.

THERE are several things connected with the late outbreak of epidemic cholera in the West Coast of Africa that are deserving of attention. In the first place the disease was said to have been new to that region. What was its origin and whence did it come? Then the population being a mixed one, composed of blacks, Europeans, and light-colored mulattoes, an opportunity was afforded of observing the relative effects of the epidemic on these respectively. There were apparently also some curious circumstances connected with the geographical progress of the disease which deserve brief notice; and lastly, the severity and extent of the outbreak were referred by some to the supineness and indecision of those charged with the administration of the political affairs of the district. There can be no doubt as to the true nature of the disease; it was indubitably cholera. The attacks were characterised by all the ordinary phenomena in the cases that were less speedily fatal; but the proportion of those in which death rapidly followed the seizure was unusually large. The disease, in some examples, passed through the premonitory stage to the fatal collapse in two or three hours; and in a few others the disorder resembled those forms of cholera which are sometimes witnessed in India: there was little or no evidence of its action on the intestinal membrane, and a comparative absence of diarrhœa.

The point, however, on which the interest is mainly centered is the origin of the outbreak itself. If cholera was quite unknown until recently in that part of the world, how did it get there? Unfortunately, this point is involved in much obscurity. We have, in reality, very little beyond assertion and conjecture to guide us. The appearance of a disease for the first time in a large district of country naturally excites the lively curiosity of epidemiologists. No outbreak of cholera has yet visited the Cape, and the disease is still unknown in Australia. There are many—and some of them able thinkers—who consider that the disease has nothing whatever to do with a specific poison, germ, or material agent of any kind. On the other hand, the majority of medical inquirers feel convinced that favorable conditions, be these what they may, are inadequate to explain the phenomena without the presence of something besides. Certain condition of temperature, air, soil, and water, in their opinion, account rather for the nursing and development than the actual generation of the disease. We may take an illustration in point. The papers were not long ago full of letters about the myriads of ladybirds. Why and whence they all came we do not know; but how they came we may do something more than conjecture. They arose from pre-existing organisation which, as far as we are aware, will always produce ladybirds if they become sufficiently developed to produce anything at all. If we suppose these to have been so many unknown, because invisible, somethings, we have the hypothetical cholera germs. As the conditions prevailing last August, were exceptionally favorable to the ladybirds, so we can readily assume that there are also conditions favorable to cholera germs. Some, like Dr. Lawson, for example, would probably refer the origin of the cholera outbreak in West Africa to the influence of a pandemic wave; others would concentrate all their energies on the discovery of the source of its introduction from without. We know definitely that cholera prevailed at the French settlement of St. Louis, in Senegal, in November of last year. The hypothesis is that it spread from Egypt or Arabia to the Moorish and other tribes inhabiting the northern and north-central continent, who, by caravans travelling from these parts, conveyed it to St. Louis. Cholera is said to have broken out there immediately after the arrival of a Moorish trading caravan; but we have no critical history of the facts, and if we had, the arrival and subsequent outbreak might stand to one another as coincidences instead of sequences. Assuming, however, that the disease did actually travel along the lines of human intercourse, we have next to account for its appearance at M'Carthy's Island. This has been done in the following way:—A powerful native chief had declared war against the numerous tribe of Mandingoes or Woollies inhabiting the country between the rivers Senegal and Gambia. A number of these Mandingoes, employed at M'Carthy's Island by the merchants, returned to their own country through the French territory of Barkel, and proceeded to the French settlement of St. Louis. Then followed the outbreak of cholera, on which these Mandingoes fled towards their own country, but not before several of them had fallen victims to the disease, which followed in their track, and created great havoc amongst their tribe. Meanwhile the army of the opposing chief had been withdrawn, and many of the Mandingoes returned to M'Carthy's Island by the same route by which they had left it. The first case of cholera at the latter place occurred on the 10th March, just four months after the outbreak at St. Louis. All the members belonging to the family of the first sufferer were attacked, and many died; after which the disease spread widely, and the mortality rapidly increased. On this, the inhabitants fled into the surrounding country, and by the river above and below the site of the island, The next place on the way to Bathurst was a trading station, called Doomassangsanof, about one hundred miles below M'Carthy's Island, where it broke out with great virulence. In the meanwhile quarantine had been established at Bathurst. A women is said to have gone, however, from the latter to the former place to attend upon a sick member of her family. She returned to Bathurst about the 3rd or 4th of May, notwithstanding the quarantine, and died of cholera. Her house was at the eastern end, or the poorest and most crowded neighborhood of Bathurst. The woman's family were attacked and carried off. At the southern end of the island several dead bodies were discovered. These were supposed to have been landed by the river traders; be this as it may, the intestines of one corpse were found filled with rice water on post-mortem examination. A detachment of soldiers stationed at Fort Bullen, about three miles from Bathurst and on the opposite side of the river, escaped altogether. The disease extended over eight week, and it numbered 1700 victims out of a population of about 5000.

Amongst the most striking occurrences of the epidemic was the comparative immunity of the European population. The disease extended among the negro race with fearful rapidity and great virulence. Doubtless the poverty and hardships to which they were subjected rendered them an easy prey to the epidemic; but it would almost appear, from this and other observed facts, that the greater proclivity of the negro to such diseases must be ascribed to the physiological characters of that race. It was only towards the close of the epidemic that the better fed and more decently lodged classes were attacked. The disease during these eight weeks gradually increased in extent, and slightly decreased in intensity. The maximum height of the curve was soon reached, the deaths numbering nearly 100 per diem; it then descended, and finally the scourge ceased altogether. In this last fact there is much to excite our thoughtful interest. Why did it cease? The sanitary condition of the place was not improved; if anything, its last state was worse than its first. One of the explanations which will naturally occur to the reader will be something of this kind. The disease ceased for the same reason that a fire goes out—for want of fuel: the individuals crossing the line of its progress that were spared altogether, or were only slightly affected, were not "conditioned"—if we may coin a word—for the action of the cholera poison. But here come a curious fact: as we have said, the disease spread up and down the Senegal from M'Carthy's Island. It reached St. Louis again; and this station, the chief commercial centre of the country, has been subjected to a recurrence of that disease, which it was accused, from its position and traffic, of having in November fostered and disseminated. The cholera, by whatever means it extended from M'Carthy's Island to Bathurst, was not favored by the wind, for its line of advance was against the prevailing trade winds.

We have, lastly, to say a few words about the administration. We fear that there was a great want of energy and clear-headedness displayed. There was ample warning; and yet no provision was made for the lodgment and care of the unfortunate sufferers when the disease did arrive. The site of the burial-ground was bad; the arrangements for the interment of the bodies were very defective; and the efforts that were made to improve the sanitary state of the place were inadequate in the extreme. The army authorities did what they could in forwarding disinfectants, and the military and colonial medical officers were untiring in their exertions; but good food, pure water, and effective drainage are the best safeguards against cholera, and disinfectants are mere makeshifts. A place may be redolent with the odor of carbolic acid, and cholera may still prevail—at least such was the case on the continent some years ago, as one of Mr. Simon's reports informs us.

PETTENKOFER'S VIEWS ON THE *ORIGIN* OF CHOLERA.

In our last issue we gave a portion of Pettenkofer's conclusions in respect of cholera; and as they are the result of much inquiry, and have been very carefully elaborated by the learned Professor of Munich, we shall make no apology to our readers for continuing them. It will be remembered the Professor holds that there is a specific germ (x) developed in India which requires a soil (y) before it can produce the proper poison of cholera (z). He proceeds to remark that the period of the first spread of cholera beyond the limits of India towards Europe occurred about the year 1820, and was coincident with the great extension of commerce and human intercourse that then took place. The first steamboat appeared in the Indian seas in 1826; but it is to be noted that the cholera was never carried by sea round the Cape of Good Hope, but crossed by land over West Asia and Egypt. Ships at sea appear to behave like immense places on land; they do not possess or develop the soil (y), but they may not the less serve to spread the specific germ (x) or the proper poison (z) from one harbor to another, providing that the voyage has not occupied much more than twenty-one days. When cholera breaks out at sea, it is usually by the introduction of x and y, whereby z is subsequently developed, though of course the specific poison (z) may be actually imported on board; but the facts connected with the occurrence of cholera at sea deserve closer investigation than they have as yet received. In the spread of cholera on land, it may reasonably be admitted that the germ coming from India meets with the same soil as in India itself; but certain seasonal and local conditions must be present before an epidemic can break out. Cholera appears to be fickle in its occurrence. There are districts, places, and even small nooks and corners of ground, at which cholera is a frequent visitant, and others to which it rarely pays its respects, notwithstanding the amount of human intercourse is to all appearance the same. How is this to be explained? The Professor thinks that in the places that enjoy an immunity, either the proper soil (y) is absent or is already occupied by other germs than x, or from some other cause the development of x is interfered with. The formation of the soil (y) is favored, or occurs chiefly, under these circumstances: first, a geological formation, analogous to an alluvial soil, which is porous to air and water to a depth of several feet; secondly, a great variation in the amount of ground water at different seasons; thirdly, the presence of certain organic and mineral substances favorable to the growth of the specific poison of cholera; and lastly, a favorable temperature. The amount of activity displayed by the germ is dependent partly on the amount of the specific poison produced, and partly on a certain predisposition to the disease, which may be occasioned by poverty, want of cleanliness, bad or insufficient food and water, overcrowding, want of ventilation, cold, mental anxiety, &c.; though some of these may also act by forming a nidus for the accumulation or extension of the germ, the soil, or the specific poison. As a general rule, it may be admitted that the disposition to cholera is increased by all circumstances which occasion a diminution in the proportion of albumen, or, in other words, a relatively high proportion of water in the system, whether this be persistent or only temporary. The simple importation of the germ into a place, and even the existence of men who are individually predisposed to cholera, may still fail in causing an outbreak, unless the soil and proper poison are present in sufficient quantity. It may be said truly that when cholera breaks out, every case and every house should be the subject of special study, and great efforts should be made to ascertain whether the case is epidemic or sporadic—that is, whether the proper poison has been developed in the place itself or has been imported from another district. In its epidemic distribution, there appears every reason for believing that cholera exhibits a special affinity or proclivity for alluvial soils and for deep-lying rivers and drainage regions; whilst it is quite exceptional for it to make its appearance in mountainous districts and in the higher portions of the watershed of any region. We will conclude our *résumé* of the Professor's propositions in a future number.

Medical Annotations.

"Ne quid nimis."

THE COLD-WATER TREATMENT OF FEBRILE DISEASES.

In the course of a visit to Central Switzerland, the traveller must almost necessarily pass through the town of Bâle; and as many of our readers doubtless are intending to go immediately on a Swiss tour, it may be well to call their attention to the fact that even in medical matters there is much to be seen which will interest them highly. Bâle is at present the residence of several very able and distinguished physicians and surgeons, and a good deal of first-rate scientific work is being done there. But we specially mention it here because the medical clinic of the General Hospital affords an opportunity for studying the effects of a mode of treatment which is unaccountably neglected by the majority of the regular profession in this country. The use of the cold bath in all febrile diseases is carried out, under the skilful direction of Professor Liebermeister, with results which appear to us very striking. Whenever the temperature rises as high as 102° Fahr., or thereabouts, the patient is placed in a plunge bath of temp. 54°, and kept there for ten minutes on the average; he is then immediately enveloped in a blanket and put into bed. The axillary temperature is strikingly lowered in this way, and the lowering goes on for some time afterwards. In the course of two, three, or more hours, however, it may have risen to its old height; and as soon as this is seen to be the case, the bath is at once repeated. In this way, as many as five to seven or eight baths may have to be given in the twenty-four hours. It is affirmed with a singular unanimity by all the practitioners of Bâle that this treatment is useful in every way; that it not merely notably diminishes the mortality (when properly carried out from a fairly early stage), but that the effect of constantly preventing the temperature of the blood from arising above a certain point is to ward off delirium and coma, and to diminish greatly the nervous oppression and distress which the patient suffers.

To those who are accustomed to follow the course of practical medicine in Germany there will be nothing new in this; for the writings of Jürgendsen, of Ziemssen, of Küchenmeister, and others, including the remarkable work of Liebermeister himself, will have made them aware of the great attention which is now given to the scientific use of hydropathy in various forms in acute diseases. But the surprising fact is, that in England, the country of Currie (the real founder of all scientific knowledge about the use of cold water in acute disease), the subject is almost entirely neglected, not merely by busy practitioners, but in our great hospitals, where the method might be so easily and so well carried out. Were it but for purposes of experiment, it seems to us that all our large hospitals, and especially our fever hospitals, should at once commence and carry out a systematic trial of this treatment. The great metropolitan hospitals are more especially called upon to do this work, because they possess, in the students of their schools, a staff of assistants who would greatly assist in making the numerous thermometric observations which are necessary. For it must be well understood that without the most careful and repeated observations on this point the cold-water treatment is useless or hurtful, and that to do good in anything like severe cases it is needful to be very persevering. If, as we understand, the mortality of typhoid at Bâle, under the cold-water treatment, was only between 7 and 8 per cent. in a bad year, and less than 3 per cent. in a year when the milder type of the disease prevailed, a strong *primâ facie* case is made out, by that fact alone, for immediately instituting experiments on a large scale in this country. But when the whole mass of existing evidence is fairly considered, the obligation becomes much stronger; and we shall be surprised indeed if any long time is allowed to elapse before every large hospital in London gives a fair and extended trial to the cold-bath treatment of febrile diseases.

BRAN FOR BABIES.

Everybody knows that dolls are stuffed with sawdust, but that real babies should be packed and preserved in bran is probably new to most people; and yet the practice is not—if we may express ourselves in the sorry pun which suggests itself—a bran new one. On the contrary, it has been tried long enough to have enabled one lady to bring up a family of five children, all of whom were lodged in cradles filled with bran, in which they slept away the unconscious sleep of infancy.

Some years ago a doctor residing in a French village about an hour and a half's railway journey from Paris—a M. Bourgeois, of Crepyen, Valois—took it into his head that the cleanest, healthiest, and best way of managing infants was to discard all the clothing peculiar to their age in favor of bran, in which material they were to be deposited for the night, or whenever they slept. It was not long before he succeeded in finding an adventurous matron willing to try this method; and now this theory has, we are assured, become so fashionable, that the doctor is unable to meet all the demands made upon his time in order to instruct young mothers in the process, and so he has constructed some little models affording a practical view of his plan. As we have recently chatted with a clever French lady, who has had personal experience of the process, and is not a little enthusiastic about it, a few practical details may be interesting. An ordinary cradle is filled with common bran. A hair pillow is put in, and then the bran is moved aside with the hands until a "hollow" is formed the size of the child's body. The infant, divested of everything below the waist, and having a little bodice or cape above that, is then placed in the bran, and its body completely covered with it, exactly as may be seen at the seaside at the present time, where children play at burying one another in the sand. A light coverlet or counterpane is finally placed above all, and baby is in bed for the night. This method is pursued from almost as soon as infants are born until they are eight or ten months old. In answer to our inquiries as to whether they did not kick their legs out of the bran, whether it was not uncleanly, and liable to become wet, and how far it was capable of being adapted to the varying temperatures of season, &c., we were assured that the children did not do the first, unless the weather was very hot, and then the coverlet was sufficient; and that the two great advantages connected with bran were its particular cleanliness, and the very equable and pleasant temperature which it maintained around the infant's body. The bran speedily absorbs fluids brought in contact with it, and the moist portions get covered with the dry, so as not to become cold or unpleasant to the child's skin. In the morning, when the infant is taken out, all the soiled bran is easily removed, and replaced by fresh,—an entirely new supply being required about once a fortnight. The liability to irritation and other affections of the skin, so common to infants where the strictest attention to cleanliness is not maintained, is said to be unknown.

Such are the advantages to be derived from packing babies in bran, as related to us, and the statements of fact were corroborated by others. The suggestion is a plausible one; but we have no personal experience of its working. It is certainly very primitive and simple, and such as we can fancy might have been conceived and practiced by prehistoric man, and not by fashionable ladies of this age, close to the great capital of France.

CEREBRO-SPINAL FEVER.

We have been favored by Mr. Lawson Tait, of Wakefield, with the following account of a singularly suggestive case which came under his observation. He had occasion to examine the corpse of a man who had been admitted into the union workhouse on the 13th August, and died after a very brief illness. The man was a tramp, said to be sixty-eight years of age, but Mr. Tait thinks he could not have been much over fifty. He was strongly built, and at the time of his admission into the workhouse apparently in good health. On the 14th he was taken ill, and removed into the workhouse infirmary, believed to be suffering from peritonitis. Death occurred in the course of the afternoon of the 14th. On the 16th, when the corpse came under Mr. Tait's observation, it was noticed that the legs and lower part of the abdomen were covered with a petechial rash; and on an examination of the body, no morbid appearances were found except in the cerebro-spinal centres. The cerebellum was soft, almost pulpy; and the arachnoid over that organ and over the medulla was intensely congested and covered with patches of lymph. On removing the spinal cord, it was found that as low down as the fourth dorsal vertebra the two layers of arachnoid were adherent, in the same way as peritoneal surfaces are from recent and not very far advanced peritonitis.

The rapidly fatal issue of this case, the limitation of morbid appearances to the cerebro-spinal centres, and the petechiæ, all correspond with the more fatal form of purpuric cerebro-spinal fever. The belief, in the first instance, that the patient was suffering from peritonitis, is also consistent with the inference that death had arisen from the malady mentioned; for enteralgia is not an unfrequent accompaniment of cerebro-spinal fever. In the outbreak on the Lower Vistula in 1865, enteralgia was so marked a phenomenon of the malady among children that the disease was popularly known by the trivial term "bellyache."

IS TRICHINIASIS NECESSARILY FATAL?

We read in a recent number of the *Pall Mall Gazette* that whilst in the opinion of the German, and we may add of English investigators, trichiniasis is always fatal, a case has occurred at Montreal which proves the contrary. The case was reported by Prof. Edwards, of Montreal, to the American Association for the Advancement of Science, and was to the effect that on the 24th of March a family in a Montreal boarding-house partook of some hastily fried ham, and in the course of an hour were all seized with nausea and pain in the stomach. One took brandy and vomited his dinner; the rest continued to have sickness and spasms. On examination, the ham was found to contain trichinæ. The patients recovered in the course of a few weeks. From the undeveloped nature of the cysts containing the worms, it was concluded that the pig from which the ham was taken had been but recently diseased. Now, in regard to this account, we beg leave to express a doubt whether trichiniasis could be said to be present at all. Assuming that the disease in the ham really consisted of trichinæ, it is well known that the worm is in its encysted state in the flesh of the pig, and that it is only set free by the solution of the cyst in the process of digestion. It then acquires its full sexual maturity, and develops the embryos, which distribute themselves through the body. There is no reason why any irritation should be set up during the mere act of liberation of the worms, and accordingly sickness is not one of the early and characteristic phenomena of trichiniasis. But all these patients are stated to have suffered from sickness within an hour. We are therefore disposed to consider that the sickness was here induced by the presence of some poison accidentally mingled with the ham, and this having been discharged from the stomach before any material digestion had been accomplished (which would necessarily be slow on so hard and indigestible a substance) saved all the sufferers from the serious and fatal results of trichiniasis. It is stated, in addition, that Prof. Agassiz, in commenting on the paper, hoped that the public appetite would not be disturbed on the subject, for every kind of meat contained parasites similar in nature. This is probably an erroneous rendering of the Professor's remarks, who may have said that most kinds of meat were *liable* to contain such parasites; but, so far as we know, the flesh of sheep and oxen, as well as of most birds, and even (in England) of the pig, is almost if not entirely free from such disease.

ON THE TIME REQUISITE TO PRODUCE A VISUAL IMPRESSION.

M. Exner, employing a modification of an ingenious apparatus suggested by Helmholtz, has found that a flash of light not exceeding 1-10000th of a second in duration is distinctly visible. His experiments show, moreover, that the time which is requisite to produce an impression of light is dependent—1. On the intensity of the illumination of the object in such proportion that if the intensity of the illumination increases in geometrical progression, the time required for its perception diminishes in arithmetical progression. (In these experiments the degree of illumination did not exceed that of white paper on which the sun was shining.) 2. On the size of the retinal image, so that, as the size of the image increases in geometrical progression, the time required for observing diminishes in arithmetical progression. This law, however, only holds for images of objects that are smaller than the macula, and are in the direct axis of vision. 3. On the co-operation of the after-impression. Thus, if the impression is very short, and a grey ground succeeds the white, the latter may not be perceived; but if it is succeeded by black, the after-image is developed, and the image of the first is perceived. It was found that the intensity of the illumination must be raised more than twenty times, if the same effect were to be obtained without as with the after impression. Lastly, it was dependent on the part of the retina on which the image falls. The most excitable part of the retina is not the fovea centralis. The spot which requires the shortest time to recognise a bright object simply as a bright spot without definite outline lies 1·33 mm. from the fixation point. That spot, on the other hand, which is able to perceive the outline of an object in the shortest time is at a distance of 0·29 mm. from the fixation point.

OVARIOTOMY AND THE PRACTICE OF EXCESSIVE FEEDING.

It is pretty well known that the leading ovariotomists after their great operation give to their patients the very lightest food. Mr. Spencer Wells gives little else for a day or two than barley-water; and we believe that Mr. Thomas Keith treats his patients similarly. The results are well known and amongst the surgical wonders of the century. It appears to us that this fact should be more considered than it is by those who urge the importance of excessive feeding in all the exigencies of disease. Here are patients whose nutrition has often been much reduced by a sort of parasitical tumour, who have been subjected to the shock of a capital operation, who have great vital functions to discharge in the days subsequent to the operation, and yet who do well upon barley-water. This is administered, no doubt, greatly with the view of not irritating the stomach and bowels; but the patient does well with it. The pulse does not rise very high, a most formidable wound heals generally by the first intention, and the digestive organs gradually acquire the appetite for, and ability to digest other forms of food. We cannot help thinking that the ovariotomists have taught both surgeons and physicians a medical and dietetic lesson in this practice.

POISONING BY STRYCHNIA.

In a case that has recently occurred at Cinderford, in the Forest of Dean, the wife of a clergyman, who had previously suffered from some mental affection rendering her confinement requisite, went to bed apparently well. Her husband followed her in the course of an hour. In the early morning he was aroused by her heavy breathing, and, in reply to questions, she stated she was suffering from cramp. She asked for water, rapidly fell into violent convulsions, and quickly died. The interest of the case centres in the fact that three medical men gave evidence to the effect that strychnia was the cause of death, though an expert analyst was unable to discover any traces of that poison in the contents of the alimentary canal. If our information, which is taken from a local paper, be correct, this seems to have been a somewhat rash and hasty conclusion. Considering how many pathological conditions may occasion convulsions, it would surely have been more prudent to leave the cause of death an open question, than to conclude, from the mere occurrence of convulsions, that strychia had been ingested, but had been entirely removed by absorption. In a criminal case, even where strong presumptive evidence of malice exists, such an expression of opinion is of very doubtful propriety; but when the evidence is, as in this instance, rather opposed to the idea of poisoning, it can only serve as a cloak to ignorance, and tend rather to confuse than to elucidate the matter.

THE WAIST OF THE PERIOD.

Our old friend, tight-lacing, has again made his appearance. Beaten back for a time, probably more by fashion than by the spread of knowledge, he has not been killed, but has only recoiled apparently for a better spring, for his victims are as numerous and pitiable as ever. The folly is one which was formerly to be found mainly in the drawing-room, but now it also fills our streets. It is lamentable to observe at every turn a woman, young or old, who moves forward in a stooping position, unable even to hold herself upright in consequence of the constraint upon the muscles of the back. If the evils of tight-lacing were confined to the distorted appearance which it never fails to produce, we might regret indeed to see the female form divine so defaced, but it would scarcely be in our province to comment upon it. But, as medical practitioners, we see its effects every day in the train of nervous and dyspeptic symptoms by which it is constantly indicated, and in the still more grave internal mischief of permanent character which is often caused by it. Until some little physiological knowledge is made a part of female education, and is considered an "accomplishment," we suppose it is of little use to protest against the cruel injury to health which women thus inflict upon themselves. The matter is one which is "worse than crime—it is folly," for beauty is destroyed by the process which is intended to increase it.

AN HONORABLE ACQUITTAL.

One of those unfortunate trials for manslaughter, in which the feelings of relatives and friends lead to the grossest injustice towards the medical attendant, has recently taken place at Downpatrick. Mr. Joseph Connolly, of Belfast, was put upon his trial for the manslaughter of an unfortunate woman who died in labour while under his care. The only point in the case was, that after a long attendance, Mr. Connolly left his patient undelivered, and that she died three hours afterwards in his absence. No imputation, however, seems to have been thrown upon his skill. Baron Deasy directed an acquittal in the following terms:

"He appears to have given every possible attention, and did not save himself. He remained in that wretched, miserable cabin, where there was no chair, the chair he used having to be brought from some other house. Under all the circumstances, I think he is not only entitled to a verdict of acquittal, but he is also entitled to it upon the highest grounds put by his council—namely, that there was no want of attention, and no want of skill. He appears to have been engaged previously in similar duties; and, according to the evidence of the relieving officer, his conduct was most satisfactory. He appears, also, to have acted as a physician during the cholera time, and we have it in evidence that he received a vote of thanks for his skill and attention to the poor. It is not likely that a gentleman of that standing would risk his professional future by anything which might have the appearance of inhumanity, as his whole future professional life must depend upon his skill and attention."

TENT HOSPITALS IN PARIS.

A trial is being made in Paris of the alleged value of the tent hospital system. Though M. Husson, the Director-General of the Assistance, is not *a priori* a believer in the advantages of this system, he has yet, through a liberal spirit which redounds to his credit, determined to make a trial thereof. Two large tents have therefore been got up in the courtyards of the St. Louis and Cochin hospitals, the latter of which has been entrusted to the charge of M. Léon Lefort, an advocate of the tent arrangement. We do not yet know what have been the results of the trial which is being made; but one thing is at least strikingly in favor of the tent system, and that is the immense saving of money which it would effect. According to a calculation which has been made, the new Hôtel Dieu of Paris will cost 40,000,000 of francs, and contain 700 beds; each bed will therefore cost 56,000 francs, whereas beds in a tent hospital may be provided for the sum of 500 francs each.

During the year 1868 a total of 24,889 persons died in the city of New York, out of a population, according to the census of 1865, amounting to 726,386 individuals. Of these deaths, 24 occurred from small-pox, 200 from measles, 861 from scarlatina, 276 from diptheria, 342 from croup, 217 from whooping-cough, 139 from typhus, 326 from typhoid, 9 from cholera, 1834 from cholera infantum, 1995 from cholera morbus and other diarrhœal diseases, 1 from yellow fever, 1231 from other zymotic diseases, and 877 by accident or negligence. These statistics represent a death-rate of 34·26 per 1000 of population.

THE discovery appears to have been made at Darjeeling, in India, that a fine light can be got from the gas generated by sewage. The results of further experiments now being carried out by the discoverer, who has been assisted by a Government grant of 4000 rupees will be looked for at home with great interest.

Reviews and Notices of Books.

A Treatise on the Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D., Curator to the Nursery and Child's Hospital, New York; Physician to the Infant's Hospital, Ward's Island; Professor in Bellevue Hospital, New York. Philadelphia: Henry C. Lea. London: Trübner and Co.

THE excellence of this book is one explanation of our not having reviewed it sooner. Taking it up from time to time we have been freshly interested in its various chapters, and so been led to defer writing our opinion of it. It is one of those works with which we are happily becoming familiar as coming to us from time to time from across the Atlantic, which contain all that is good in European works of the same kind, together with much that is original both in reflection and observation. It is astonishing how well the American writers succeed in gleaning, and yet giving a fresh character to their books. This work is an illustration, and pervading every chapter of it is a spirit of sound judgment and common sense, without which any work on any department of the practice of medicine is, to use the mildest word, defective.

Before entering on the Diseases of Infancy and Childhood, the author has eight valuable chapters on various subjects of general and preliminary interest, under the following titles:—Chapter I. Infancy and Childhood. Chapter II. Care of the Mother during Pregnancy. Chapter III. Mortality of Early Life; its Causes and Prevention. Chapter IV. Lactation. Chapter V. Selection of a Wet-nurse. Chapter VI. Course of Lactation; Weaning. Chapter VII. Artificial Feeding. Chapter VIII. Diagnosis of Infantile Diseases. The Diseases of Childhood are then considered: first, as effecting the great Systems of the Body; then come the Zymotics; then Diseases of the Skin; then a chapter on the Diseases of the Circulatory System. The book ends with sundry appendices.

We have sufficiently indicated our opinion of the book without going into details of criticism on its various parts. There are one or two chapters, however, which we think entitled to special praise: in particular, the one on Colitis, or intestinal inflammation in infancy. The carefulness with which this disease is portrayed and differentiated from common cholera infantum, with which its morbid appearances are defined (the liver is shown to be generally unaffected), and, perhaps above all, the care with which the influence of city conditions and artificial food in its production and continuance is described, make the chapter an extremely valuable one. It is an interesting feature of this book that Dr. Smith introduces into it many remarks on the prevalent diseases of New York and other parts and cities of America. The bearing of locality and climate on entero-colitis is very plainly shown. "There is no one disease," says the author, "except consumption, so prevalent and fatal in this city as infantile entero-colitis during the period of its epidemic occurrence in the summer months."

"Entero-colitis prevails most on low grounds near the seashore. But the state of atmosphere which is most favorable to its development is found only in the cities. The filthy streets containing more or less decaying animal and vegetable matter, the crowded and unclean tenement houses, the neglected privies, the slaughter-houses, pig-pens, bone-boiling establishments, and the like, are so many sources of the most deleterious effluvia, which inspired by the infant, produce diarrhœa and intestinal inflammation. Those squares of the city where sanitary regulations are most neglected are the very ones where the mortality from this cause is largest."

In addition to the atmospheric element in the causation of the disease, there is another, present in a large number of cases—namely, improper and generally artificial food.

It is facts like these which show us how potential social and climatic conditions are in the production of disease.

The morbid anatomy of entero-colitis is well described, on the basis of a large number of post-mortem observations. "In all cases except one—namely, in 81—there were lesions indicating inflammation of the mucous membrane of the colon." In Appendix B the state of the liver is carefully described, with the result of giving little corroboration to the belief that it is materially affected in this disease, and therefore little justification to mercurial or other treatment directed to this organ. Intussusceptions of the intestine are common in this malady.

As may be gathered from what we have said, the great hope for children attacked with this disease consists in better food, if possible a wet nurse, and removal to an elevated locality. Medicines apart from these have little power; but the best of them are alkalies, opiates, and astringents.

We are sorry that we cannot give further illustrations of the excellence of this book. There is one serious defect in it—an insufficient account of the diatheses, and of their effect in modifying disease and its tendencies. The different forms of infantile paralysis, too, might have had a larger illustration. These supplied, it will be one of the very best works of the kind.

Counsel to a Mother. Being a continuation and the completion of "Advice to a Mother." By Pye Henry Chavasse. pp. 180. London: Churchill & Sons. 1869.

Mr. Chavasse's works addressed to a wife and a mother are so well known and so deservedly popular, that we can but regret that he should have added to the series a book which can be of little service to a mother who possesses the former volume, and which will add nothing to his reputation. Though Mr. Chavasse's advice as a medical man may be eagerly sought, most parents will think that they have a right to an opinion on many of the subjects upon which the author here dogmatises; and that it is a little beside the mark for their doctor to lecture them on such subjects as Affectation, Bravery, Disobedience, Impartiality, Love, &c. &c., copiously interspersing his remarks with quotations in prose and verse. With regard to a "Poem on Childhood," by the author, occupying ten pages of the work, we had rather be silent critically, and leave the author to the tender dealing of his friends, of whom he has many. The advice contained in these pages is nevertheless sound, and may be studied with advantage by inexperienced parents.

Correspondence.

THE DUBLIN QUARTERLY AND DR. WHITEHEAD, OF NEW YORK.

To the Editor of The Lancet.

Sir,—In the number of The Lancet for November, Dr. Whitehead, of New York, takes me to task, in a letter addressed to you, for criticisims I have made in the report on Surgery in the *Dublin Quarterly Journal*, on a paper published by him in the *New York Journal* on the "Surgical Treatment of Cleft of the Hard Palate," &c.

Dr. Whitehead accuses me of having charged him with inaccuracy, and alleges that the only statement I make to support the charge is in itself inaccurate. He refers me to page 52 of Sédillot's work ("De l'Evidement sous-périosté des Os." Paris, 1867) to convince me of the accuracy of his statement that Sédillot's patient was three years of age. The passage which he quotes ("Mon malade âgé de trois ans, a été opéré le 23 Mai") is contained in an article reprinted from the *Comptes Rendus de l'Académie des Sciences*, vol. lvii., 1863. If Dr. Whitehead will refer to the *Comptes Rendus*, he will find that the word "trois" in the above passage is a misprint for "treize;" and if he will further refer to Dr. Sédillot's work, entitled "Contributions à la Chirurgie," vol. ii., pages 657, 669, he will find the passage in question twice repeated, the word being in each case "treize." In the full account of the case published in the *Gazette Hebdomadaire de Médecine*, Jan., 1864, and reprinted in the "Contributions à la Chirurgie," the question as to the age of the patient is clearly decided by the illustrations, which cannot be taken to represent a child aged three years. Had Dr. Whitehead read the full account of the case, he would have seen that his statement that "there is nothing said about the speech" was incorrect, and that passage quoted in my report ("L'enfant parle beaucoup plus distinctement," &c.) was not an invention of mine, as his letter would almost suggest. It occurs in the "Contributions à la Chirurgie," vol. ii., page 667.

The prejudice which I attributed to Dr. Whitehead was a prejudice in favor of a particular operation, likely to induce inaccuracy in his analysis of the recorded operations for cleft palate, and I am at a loss to know how he can have supposed that I attributed to him a dislike to Dr. Sédillot or to the French nation generally. This prejudice I conceived appeared in the passage which I quoted, and I conceive so still; for I do not think that Dr. Whitehead intentionally stated that Sédillot's only object in performing the operation in question was to disprove a particular theory.

I apologise to Dr. Whitehead for having misapplied the passage relating to the condition of speech in his own case, which gives an over-favorable account of the result, and also for a printer's error which makes the word "operator" read "operation," and which escaped notice as it does not effect the sense materially.

I am, Sir, yours respectfully,
Edw. H. Bennett, M.D.

Dublin, October 18th, 1869.

TREATMENT OF CHRONIC LICHEN.

To the Editor of The Lancet.

Sir,—I should be much obliged by the insertion in your next number of the following particulars of a case at present under my care.

C. L——, aged thirty seven, married, has always had good health until about two months ago, when, without any constitutional disturbance, an eruption resembling chronic lichen appeared on the body and arms, especially upon the inner aspect of the latter; has never invaded the face, hands, or legs; itches when warm, but not excessively, which may be partly due to the patient constantly wearing flannel shirts next the skin. There is no suspicion of syphilis, or any hereditary predisposition. The treatment, in the first instance, consisted in the administration of simple salines and aperients, together with an occasional warm bath, followed by alkalies, conjoined with the liquor arsenicalis and a course of Plummer's pill.

I shall be very glad if some of my fellow-practitioners will kindly favor me with their experience in the treatment of similar obstinate cases.

Yours truly,
Epidermis.

November 21st, 1869.

THE CHOLERA IN WEST AFRICA.

The latest news gives somewhat more precise accounts as to the spread of cholera in West Africa. The disease first appeared, it is believed, at Podor, a large village on the river Senegal (lat. 16° 35′ N., long, 15° W.) This village, as well as other trading stations on the river, maintains constant communication with Morocco by means of caravans which traverse the desert to the north of the Senegal. Cholera prevailed extensively in Morocco during the summer of 1868, and it is surmised that the malady may have been introduced into Podor by the agency of the caravans. Cholera appears to have prevailed in Podor during the autumn of 1868; and from this village, it is thought, the disease was carried to St. Louis, the capital of the French possessions on the Senegal. Up to this point the history of the outbreak is as yet exceedingly vague. We adopt our reporter's language, and would add the cautionary comment that it simply points to the fact believed upon the spot, that the epidemic showed itself first in a locality about 120 miles, in a direct line, from the mouth of the river Senegal. We may add also that the wide prevalence of cholera in Morocco, in the summer of 1868, is also a fact.

On the 1st December, 1868, the presence of cholera in St. Louis was officially declared. St. Louis is an island at the mouth of the Senegal river. It is occupied by a town which has a native population of about 12,000, and European residents to the number of from 300 to 400. The epidemic was officially declared to exist in the town on the 1st December, and it terminated on the 15th of the same month. Within this brief period, it is believed that not less than 1800 persons perished.

After the disease had appeared at St. Louis, it broke out at Richardtoll and Wagana, two trading stations on the Senegal, intermediate between the mouth of the river and Podor.

On the 9th April, 1869, the epidemic broke out at M'Carthy's Island, on the river Gambia, and about 180 miles from the mouth of the stream. This island has "constant communication with Richardtoll and Wagana, by means of traders and laborers (the latter particularly during the ground-nut season). These pass between the different stations across the Jaloof country, and the local belief is that the malady was carried from the stations on the Senegal to M'Carthy's Island through their agency. The population of M'Carthy's Island is from 300 to 400, and the disease prevailed among those who remained on the Island, after its appearance, until the 28th of April. No less than 98 persons were known to have been carried off, but the actual loss of life was no doubt greater. Many of the natives fled when the epidemic broke out, and they would seem to have spread the disease among the populations on both sides of the river above and below the island. The latest news states that the malady had extended along the Gambia, as far as the kingdom of Bonudoo, about 700 miles from the river's mouth.

While the epidemic was ravaging M'Carthy's Island, and commencing its career along the course of the Gambia, it was still extending among the populations scattered on the banks of the Senegal, and a recent account states that it is penetrating towards the interior of the continent.

It is remarkable that on the Gambia, as on the Senegal, the epidemic, according to our present and fairly trust-worthy information, appeared first inland. Of the progress of the epidemic up the river Gambia (as up the river Senegal) only a general account is forthcoming. Of its progress towards the sea, a more precise knowledge is practicable.

After attacking M'Carthy's Island, the epidemic in its course seaward first broke out at Doomasangsang, a trading station about midway between M'Carthy's Island and the mouth of the Gambia. This station had a population of about 300, of whom (exclusive of those who fled) 80 were carried off.

Subsequently Albreda, a trading station about nineteen miles from Bathurst, was attacked, and the malady prevailed there as virulently as at the two stations named higher up the river. The virulence of the disease, indeed, along the whole course of the Gambia appears to have been appalling.

Bathurst is a town situated on the island of St. Mary, at the mouth of the Gambia. When it was known there that cholera had broken out at M'Carthy's Island, a quarantine was established, which from the first it might have been seen would be futile, not only as against communication with trading vessels putting in to the port, but especially as against canoes coming from the contiguous mainland. Canoes readily passed by night, laden with people who were effecting their escape from infected districts higher up the river.

On the 5th of May, as already stated, cholera appeared in Bathurst. The town is situated on a porous soil, saturated with moisture, and the water for the use of the population is chiefly obtained from shallow surface-wells in the vicinity of the huts of the natives. Extreme excrementitious pollution of the surface is the rule. The population numbered, at the time of the outbreak, about 4250 souls. Although cholera was first recognized on the 5th of May, it is probable that the disease existed among the native population at an earlier date. On the 7th of May there were 13 deaths; on the 11th, 17; and, the number fluctuating from day to day in the interval, on the 22nd, 23rd, and 24th, on the average, 74 deaths daily. After the 24th, the disease decreased gradually, and on the 21st of June the last patient was discharged from hospital. The number of ascertained deaths from cholera was 1174, upwards of one-fourth of the whole population! Probably a third of the inhabitants of Bathurst were swept off. The self-denying and altogether unselfish and noble labors of Staff Assistant-surgeon Dr. Robert Waters, and of Lieutenant F. A. Stewart, of the 1st West India Regt., during this terrible visitation, deserve the highest recognition. The great forethought and energy of Rear-Admiral Patey, the administrator of the colony, in the grave crisis which had befallen it, excite warm admiration.

From Bathurst, the epidemic, carried, it is believed, by laborers during the migrations of the ground-nut season, passed to Wakar, a town of 3350 inhabitants, situated on the mainland, ninety miles north of the mouth of the Gambia. The disease next seized upon Rufisque, a town having a population of 4550, and situated north of Wakar, and to the south of the base of the peninsula which terminates in Cape Verde. From Rufisque and Wakar, the epidemic spread to Goree. The island of Goree is a French possession; it contains a population of 2525, and it lies about ninety miles north of the mouth of the Gambia, and immediately south-east of Cape Verde. The epidemic broke out early in June of the present year, and at the time of the last account the deaths amounted to 14 daily.

This is the first time that epidemic cholera is known to have prevailed in Western Africa, and we trust that in a short time we shall be able to lay before our readers an authentic detailed account of the spread of the epidemic, and of its relation to the extension of the malady in Northwest Africa.

Foreign Gleanings.

EFFECTS OF CARBOLIC ACID ON THE ECONOMY, ON VEGETABLE PARASITES, AND DISEASES OF THE SKIN.

Dr. Neumann, of Vienna, has published, in Dr. Pick's *Archiv für Dermatologie und Syphilis*, Part III. (1869), an excellent article on the above subject. The author experimented largely on animals and plants, and has used the acid in a certain number of cases, the principal of which he relates. Dr. Neumann sums up as follows:—Carbolic acid is an energetic poison, which acts directly on the nervous system; its external or internal use may cause death. It acts three times more quickly when injected under the skin than when taken into the stomach. The acid is useful in scaly skin diseases, but especially in their early stage; it may be used as a caustic in chronic inflammations, and in parasitic affections. The acid, finally, possesses the power of arresting the germination of the lower vegetable organisms; but the solutions must for this purpose be stronger than has been advised —viz., 1 in 500 or 300, and not 1 in 1000.

VILLATE'S LIQUOR.

Now that carbolic acid is in fashion, it is not out of place, as the reign of therapeutical agents is sometimes short-lived, to notice that M. Notta, of Lisieux (France), has lately strengthened his long advocacy of Villate's liquor, by the publication of fifty-four cases of fistulous tracts connected with carious and necrosed bone, cold abscesses, gunshot wounds, crushing of limbs, in which injections with this solution have been successful. The composition of Villate's liquor, originally used in veterinary practice, is as follows:—Liquor of subacetate of lead, four ounces; crystallised sulphate of zinc, two ounces; crystallised sulphate of copper, two ounces; white wine vinegar, two pounds. It should be used prudently, as Lassaigue has shown that these substances react upon each other in such wise that an excess of vinegar holds in suspension about an ounce and a half of sulphate of copper, a little more of sulphate of zinc, three-quarters of an ounce of acetate of copper, as much acetate of zinc, and nearly two ounces of insoluble sulphate of lead. Two cases of death have made surgeons cautious; but, with due precautions as to the quantities injected, the testimony of Velpeau and Nélaton will tend to render the use of the liquor more general.

THE SULPHITES ATTACKED.

Polli's theory has been energetically questioned in Florence by Dr. Bellini, who endeavored to prove that when the sulphites are given for some time in pretty large doses they may retard morbid fermentation, not as sulphites, but by rendering the fluids of the economy more alkaline. Dr. Paganucci supported this view (at a meeting of the Physico-Medical Society of Florence), and stated that, for anatomical purposes, he succeeded in retarding putrefaction by injecting into the vessels a solution of carbonate of soda.

VACCINATION NEEDLE.

Dr. Falconi mentions, in the *Giornale delle Malat. Ven.*, that he has found the following needle useful:—Length, that of ordinary needles; at the extremity a kind of minute and pointed bowl connected with the groove in the needle. The lymph placed in the bowl passes partly into the groove, and when the instrument is horizontally thrust under the skin, the subcutaneous tissues are bathed with the lymph.

EXCISION OF THE KNEE IN FRANCE.

It would appear that excision of the knee is seldom performed, or seldom succeeds, in Paris, as considerable attention has been directed to the case of a woman, aged twenty-one, under the care of Prof. Richet, whose knee had been the seat of chronic inflammation and abscess for eight years, and who after the operation contrived to walk pretty well. Such cases are common enough in this country.

News Items, Medical Facts, &c.

Therapeutical Uses of Arsenic.—At a recent meeting of the Académie de Médicine, M. D. Devergie made some very sensible and practical remarks on the use of arsenic. He deprecated the indiscriminate employment which is made of such and such a form or such and such doses of the remedy. He insisted on the fact that arsenious acid had quite different effects when taken in the shape of an impalpable powder, or a coarsely-ground powder; then tolerance on the part of the stomach differed completely according as the solution was concentrated or not; lastly, it acquired considerable energy when combined with potash, soda, or ammonia, and lost much of its strength when combined with iron. Proper care should therefore be taken in the choice of the form of arsenious acid, of the degree of strength, &c. Then the remedy should be administered in gradually increasing doses, as the system could not support at the outset such strong doses as at a later period. M. Devergie concluded by inviting practitioners to return to the use of Fowler's and Pearson's solutions as being the very best and safest form of the remedy.

Hypodermic Injection in Strangulated Hernia.—Dr. Ravoth (*Berlin Wochenschr.*, No. 23, 1869), mentions a case of strangulated femoral hernia in a man of fifty-six, in which taxis was unsuccessful until subcutaneous injection of morphia was used. Reduction was then effected. The author mentions a second similar case in a woman of forty-five, where the same measures were followed by the same successful results. Dr. Ravoth states that he has found only two analogous cases in medical literature: 1st, Steinhaus (*Wiener Med. Presse*, No. 13, 1866), and 2nd, Eulenburg(a work entitled "Hypodermatisch Injection," 2nd edit., 1867, p. 165).

Electricity in Phagedenic Chancre.—Prof. Schwanda brought before the Medical Society of Vienna, in January last, two cases in which the usual remedies failed to arrest phagedena. The constant current was then used, and the chancres healed in a short time. The Professor does not venture to explain the *modus operandi*, but thinks that unspecific phagedenic ulcerations would be equally benefited.

Elephantiasis Arabum.—The treatment of this complaint by means of compression or deligation of the main vessel, is cleverly discussed by Dr. Fischer, in Virchow's *Archiv*, vol. 46, part 3, 1869. All the cases reported are collected and discussed as to etiology, treatment, and results. As deligation has in several cases proved disastrous, the author is inclined to think that compression will in general (at least *in limine*), be preferred.

PRINTED AND PUBLISHED BY
Wm. C. HERALD, Agent, 131 WILLIAM ST., NEW YORK.

INDEX.

JANUARY—DECEMBER.

A

- **Abscess**, intra-osseous, trephining 44
  - drainage by spiral wire tubes, on a new system of 535
- **Absinthe** and alcohol 336
  - on the effects of 506
- **Academy** of Medicine of Paris, anniversary meeting of the 175
- **Acid**, prussic, as a reviving drink 338
- **Adams, J.**, clinical lecture on a case of fractured base of the skull; with rupture of a branch of the spinous artery, and pressure on the brain 298
  - clinical lecture on a case of stricture, with abscess in perineo 630
- **Allbutt, T. C.**, on the diagnostic value of the ophthalmoscope in "Tubercular" meningitis 420
  - clinical lecture on paracentesis pericardii 464
- **Allen, P.**, on some of the functions of the middle and internal ear: and their analogies, 146, 193, 247, 300, 366
- **Allison, A.**, diagnosis of hanging 427
- **Althaus, J.**, on certain points in the physiology and pathology of the fifth pair of cerebral nerves 103
- **Ammonia**, on the injection of, into the circulation 504
- **Amputation** of the thigh by separation of the lower epiphysis, on 35
  - of the leg above the malleoli 175
  - at the hip-joint; recovery, case of 219
  - of thigh for disease of the knee-joint, with extensive suppuration among the adjacent muscles 326
  - of the lower third of the thigh 489
  - of conical stump of left thigh 490
- **Anæsthetic**, nitrous oxide as an 174
- **Aneurism**, subclavian 112
  - aortic, probable cause of its great prevalence in the Army compared with the Navy and male population, and consequent remedy 250
  - popliteal, double, a case of 257
    - in a diabetic patient 400
    - cured by means of Signorini's tourniquet after flexion had failed, a case of 546
  - of descending aorta 324
  - of the aorta 324
  - the distal operation for 341
  - diffuse, of the left external iliac artery; gangrene of leg; amputation; rupture of the sac; death 379
- **Angina** pectoris, depending upon occlusion of the mouths of the coronary vessels 43
- **Animals**, notes on the diseases of, in a state of confinement 429
- **Ankle**, necrosis of 378
- **Annales** de Dermatologie et de Syphiligraphie 117
- **Anstie, F. E.**, on the treatment of "epileptiform" neuralgia in its earlier stages 205
- **Anthrax** 120
- **Antiseptic** dressing 383
- **Aorta**, thoracic, case of malignant disease encircling the 660
- **Aortic** disease, attended with angina pectoris, in which nitrite of amyl, chloroform, and subcutaneous injection of morphia, were each used with benefit, case of 217
- **Aphasia**, concerning 77
  - question, the 278
  - with cardiac murmur 607
- **Apoplexy**, pulmonary, causing gangrene of the lung and pneumothorax, case of 373
  - spinal, case of 538
- **Arachnitis** following a fall on the head; trephining; death, case of 545
- "**Archives** of Ophthalmology and Otology." 342
- **Aristocratic** cruelty 568
- **Arsenic**, local use of 120
  - therapeutical uses of 670
- **Arteries**, antiseptic ligature of, on the 37
  - on the comparative strength of, secured by the methods of ligature, acupressure, and torsion 361
  - clinical observations on lesions of, and some effects of the deligation of their trunks; concluding with a case of encephaloid cancer of the leg treated by ligature of the popliteal artery, 529, 632
- **Artery**, femoral, ligature of the 53
  - brachial, wound of, and division of median nerve 383
  - subclavian, ligature of the 512
- **Ascites** 111
  - dependent on cirrhosis of the liver, treated by copaiba, case of 260
- **Asthma**, on the treatment of, by belladonna 203
- **Ataxy**, locomotor, progressive 325
- **Atrophy**, acute muscular, a case of 93

B

- **Bacchus**, sacrifices to 171
- **Bacon, G. M.**, on a rare cause of death in so-called epilepsy 434
- **Bain, W. P.**, on a new and simple method of inducing artificial respiration in cases of asphyxia from drowning, strangulation, chloroform, poisonous gases, etc 160
- **Bakewell, R. H.**, on a case of tetanus cured by bromide of potassium 257
- **Barlow, W. H.**, on a case of poisoning by carbolic acid 645
- **Barnes, R.**, on the operations for the relief of chronic inversion of the uterus, with the account of a case successfully treated by a new method 385
- **Baron** Anslem de Rothschild 288
- **Bateman, H.**, on successful ovariotomy performed in the fourth month of pregnancy, after rupture of the cyst and peritonitis 643
- **Beards** in the Navy 560
- **Beef-tea** and extract of meat, on the alleged poisonous quality of 118
- **Beigel, H.**, on the pathology and treatment of epilepsy 133
- **Bell, P. M.**, on a case of spontaneous evolution 37
- **Benfield, T. W.**, some observations on the operations for extraction of stone performed at the Leicester Infirmary; containing a statistical account of the lateral and median methods, 532, 595
- **Bennett, H.**, on pneumonia 388
- **Bernard, Claude**, senator 509
  - and the French senate 510
- **Bickersteth, E. R.**, remarks on the antiseptic treatment of wounds, 424, 475
- **Birch, S. B.**, remarks on the exhibition of oxygen as a therapeutic; in connexion with a new, agreeable and easy form of administration by the stomach 372
- **Birkett, J.**, description of a dislocation of the head of the femur; complicated with its fracture: with remarks 328
- **Bladder** and epispadias, fission and extroversion of the, with the results of eight cases treated by plastic operations 267

Blanc, H., on abscess of the liver: a new treatment employed successfully in four cases, 527, 597, 637.
Bleeding, the proposed revival of... 112
Blisters in children... 175
Blood, arterial and venous, the temperature of... 333
  the new color-test for... 341
Boils and carbuncles, on the subcutaneous section of... 255
Borderland... 639
Bowels, obstruction of the, exploratory operation; peritoneum opened; band found constricting the ileum... 382
  obstruction of the, owing to scirrhus of colon; death. 542
Bowstead, R. M., on subcutaneous injection of morphia and aconite in convulsions after labour... 433
Bradley, S. M., notes on the diseases of animals in a state of confinement... 429
Brain, syphilitic disease of the, optic neuritis; convulsions beginning unilaterally... 43
  diffused contusion of the, and hæmorrhage into the arachnoid cavity, without fracture of the skull, case of... 258
  concussion of, followed by symptoms of irritation and a succession of fits, continuing at short intervals for ten days; question of trephining: treatment by antimony; recovery, case of... 436
Bran for babies... 664
Branson, H. J., on a case of acute rheumatism followed by chorea... 34
Brave surgeon, a... 568
Bread-making... 340
Breast, glandular proliferous cystic disease of the, amputation; acupressure needles; carbolic-acid dressing; recovery... 437
Brodhurst, B. E., lectures on orthopædic surgery, 12, 69, 130, 177, 236, 345, 404, 466, 569...
Brooke, C., remarks on a paper entitled "The force of the heart, effective and absolute," by Prof. Buchanan... 537
Brown-Sequard, C. E., lectures on the physiology and pathology of the nervous system, and on the treatment of organic nervous affections, 1, 65, 121, 233, 401, 457...
  lectures at the School of Medicine... 507
Brown, A., on the successful treatment of femoral hernia in the male subject... 539
Bryan, J. M., on a case of ischuria renalis, icterus, and low pneumonia combined... 206
Buchanan, G., on amputation of the thigh by separation of the lower epiphysis... 35
Bunsen, Prof., of Heidelberg, accident to... 512
Bursa patellæ, thickened and suppurated, removal of... 152
Buzzard, T., on how an outbreak of typhoid was produced... 36
  on a medico-legal case of injury to the nervous system... 148

C

Cæsarean operation in Belgium... 176
  post-mortem; birth of a live child... 441
Calabar bean, physiological and theraputical effects of the, employed in hypodermic injections... 608
Calculus, renal, on nephrotomy as a means of treating... 442
  in the bladder; lithotomy; recovery... 442
  vesicæ: case where death followed the introduction of the lithotrite... 604
    lateral lithotomy; successful result; with clinical observations on the mode of operating... 652
  retention of urine from, lithotomy: recovery... 657
Camphor, danger of giving strong doses of... 232
Cancer, epithelial, origin of... 453
  curers, unqualified... 559
Carbolic acid, the use of, 95, 100, 214, 216, 218, 320...
  employment of... 97
  treatment of suppurating and sloughing wounds and sores... 152
  in the treatment of certain diseases of the skin.. 256
  charbon and the use of... 276
  in malarious fever... 279
  a case of poisoning by... 645
  effects of, on the economy, on vegetable parasites, and diseases of the skin... 670
Carcinoma of omentum and lung... 384
Carter, R. B., on the treatment of the paralytic forms of strabismus... 147
Cataract, treatment of, by phosphorus... 175
  phosphorus in... 344
  the synthesis of... 448
Catarrhus vesicæ... 120
Cautery, galvanic, in surgical practice, cases illustrating the value of the... 374
  the... 381
Cavalry soldier, on some of the causes of the premature decline of the... 642
Cerebellum, the uses of the... 556
Cerebral injury, a remarkable case of complete loss of hair all over the head and body from... 541
Cerebro-spinal concussion, a case which illustrates some occasional sequelæ of... 605
Chancre, phagedenic, electricity in... 670
Charteris, M., notes of a case of keratitis... 209
Child, E., on a case of maternal impression... 37
Chloroform, trifling with... 173
  in the urine... 279
  on the use of, in the cure of cleft palate; cases; with remarks... 587
Cholera, hog... 453
  prophylaxis of... 511
  Pettenkofer's views on the origin of, 614, 662...
  fungus, the supposed... 617
  the, at the Gambia... 661
  the, in West Africa... 669
Chorea... 325
  and pericarditis... 325
  treated with succus conii... 327
Clamp, hæmorrhoidal, improved, description of an... 598
Clarke, F. E., on morbus Addisonii... 644
Clinical notes from lectures in the course of clinical instruction at St. Mary's Hospital... 91
  training... 561
Cockle, J., further contributions to the pathology and treatment of aneurismal tumours of the neck and chest... 357
Coleman, W. St. John, on carbolic acid in the treatment of certain diseases of the skin... 256
Colic and epileptic convulsions... 323
Colotomy... 384
Coma of obscure origin, a case of... 604
Constable, J., on a case of persistent and alarming hiccough in pneumonia, cured by the subcutaneous injection of morphia... 591
Continent, health-condition of the... 621
Continental appointments, 619, 622...
Coote, H., on a case in which two loose cartilages were removed by separate operations from the left knee-joint of the same individual; recovery, without an unfavorable symptom... 428
Copperas and water... 176
Coroner's inquiry, a... 64
Corpuscles, tactile, structure of the... 60
  virulent... 508
Cough, with elevation of temperature... 607
Counter-irritation, on the philosophy of, as applied in practice... 317
  on... 370
Convent life, the physiology of... 335
Croton oil, large ingestion of, by a little girl; recovery... 624
Croup, tracheotomy in... 120
  sulphur in the treatment of... 232
  on the local treatment of... 506
Cruise to the southern latitudes, a... 558
Cruveilhier's disease... 325
Curling, T. B., clinical lecture on two cases of excision of the knee-joint... 524
Custom-house officers, health of... 619
Cyst, large sebaceous, removal of a, from the neck... 210
Cystitis from latent stricture, case of casual association of several independent diseases, one of which was... 599
Cysts, hydatid, on the spontaneous cure of... 386

D

D'Archiac, M... 341
Day, W. H., on a case of diabetes treated with the peroxide of hydrogen... 316
Death from eating the water hemlock... 624
De Beauvoir de Lisle, Dr., memorial to the late... 512
Delirium tremens... 607
De Morgan, C., on the presence of muscular fibre in erectile tumours... 431
Dentition, second, on the digestive derangement accompanying the... 476
Dermatological researches, recent... 169
Deville's, M. Sainte-Claire, experiments on the effects of pressure—a curious laboratory... 509
Diabetes... 324
  the causes of... 273
  opium in... 279
  mellitus, on the alleged efficacy of the peroxide of hydrogen and ozonic ether as remedial agents in... 311
    treated by opium with benefit, a case of... 607
  treated with the peroxide of hydrogen, case of... 316
  treatment of, by peroxide of hydrogen... 608
Diarrhoea, tropical, sulphate of quinine in... 510
Diphtheria, severe, with unusually slow pulse and slight constitutional symptoms, a case of... 94
Disease, fungus theory of, a blow to the... 62
  brief remarks on some of the forms of, observed during and since the last unusually fine summer... 198
Dropsy, ovarian, of two years' duration; ovariotomy; recovery... 381

Drowning, on the Marshall Hall method of prone and postural respiration in, and other forms of apnœa and suspended respiration, with some suggestions for its more general adoption by the public...... 32
Drug action on...... 431
Drugs, therapeutic action of, papers on the...... 201
Drunkenness as a disease...... 341
Duffy, B., on a case of emprosthotonos, resulting apparently from cold, successfully treated by the subcutaneous injection of the solution of the extract of the Calabar bean.... 540
Dyspepsia, on torpor of the colon as a complication in...... 364

E

EAR, middle and internal, on some of the functions of the, and analogies, 146, 193, 247, 300, 366.....
Echinococci in Iceland...... 227
Eczema, on the nature of, from a clinical point of view; with a criticism of Hebra's views...... 83
Elam, C., on medicine, disease, and death...... 471
Electricity, relations of, to nervous and muscular action...... 454
Elephantiasis arabum...... 670
Ellis, E., on a case of tabes mesenterica and secondary chronic peritonitis...... 590
Ellis, R., on the Marshall Hall method of prone and postural respiration in drowning and other forms of apnœa and suspended respiration, with some suggestions for its more general adoption by the public...... 32
  on a new system of abscess drainage by spiral wire tubes...... 535
Embolism of the brachial artery, a case of...... 33
Emphysema, general, following rupture of the stomach; double intussusception of the ilium, a case of...... 101
Emprosthotonos, resulting apparently from cold, successfully treated by the subcutaneous injection of the solution of the extract of the Calabar bean, on a case of...... 540
Endotoscope, the...... 120
Epidemics, on the origin and progress of...... 114
Epiglottis, enormous irregular thickening of the, of doubtful pathological nature...... 487
Epilepsy, compression in...... 64
  in a child affected with congenital syphilis: good effects of treatment...... 96
  on the pathology and treatment of...... 133
  bromide of potassium in, fatal effects of tartar emetic...... 400
  so-called, rare cause of death in...... 434
  successfully treated with assafœtida, case of...... 606
Erichsen, J. E., clinical lecture on six cases of aneurism...... 6
Erysipelas...... 383
Etiology, some neglected points of...... 57
E-tsze Hospital, Hong Kong, the...... 622
Evolution, spontaneous, a case of...... 37
Excision of the larger joints; with a table of cases...... 101
  primary, of the elbow-joint, on...... 151
  of the elbow-joint...... 489
  of the head of the humerus for unreduced dislocation...... 152
  of olecranon ulnæ...... 321
  of the knee-joint...... 489
  of the head of the femur, 489, 490......
  of the ankle-joint...... 489
  of the knee in France...... 670
Experiments on the living, the limit of...... 399
Eyeball, cases illustrative of the necessity of an early removal of an, with lost vision in consequence of accident...... 150

F

FALSETTO notes, on the production of...... 503
Farr, A., explanation of the cause of scurvy and the action of the different so-called antiscorbutics; with suggestions as to the best means of preventing the disorder.... 309
Febrile diseases, the cold-water treatment of...... 663
Femur, division of, for bony anchylosis...... 324
  description of a dislocation of the head of the, complicated with its fracture: with remarks...... 328
Fergusson, Sir W., operations at King's College Hospital.... 100
Fever, rheumatic, remarks on the natural history of...... 221
  debate on the treatment of...... 252
  relapsing, on the occurrence of, among the Polish Jews admitted into the German Hospital in London...... 252
  scarlet, on the treatment of...... 256
  yellow, in South America...... 456
  enteric, with blood passed from the kidney, a case of.. 604
  cerebro-spinal...... 664
Finlay, C., on a remarkable case of laudanum-poisoning by an enema...... 90
Fleischmann, A., remarks on rheumatism...... 369
Flogging girls...... 275
Fœtus in utero, cries of a...... 175
Food, on the nutritive value of different sorts of, 144, 188, 245, 303......
Foot, perforating ulcer of the...... 400
Foster, B. W., clinical lecture on paralysis with apparent muscular hypertrophy...... 413
Fox, T., on the nature of eczema from a clinical point of view; with a criticism of Hebra's views...... 83
  note on the use of sulphur in itch...... 302
Fracture with displacement of the spine; reduction by pulleys...... 264
  of both patellæ...... 383
  compound comminuted, of both legs, on a case of.. 433
  of several ribs; unreduced dislocation of clavicle forwards; recovery...... 491
  of the lower portion of the leg...... 511
  of skull, followed by pulsating fluid tumour of scalp, and escape of cerebro-spinal fluid, on a case of...... 533
French, J. G., on the subcutaneous section of boils and carbuncles...... 255
  on the philosophy of counter-irritation as applied in practice...... 317
French parliament, forthcoming, representation of the profession in the...... 510
  councillors of State, and the School of Medicine of Paris...... 622
Fussel, E. F., on a case of encysted abdominal tumour; spontaneous recovery...... 540

G

GALL-STONES...... 455
  on...... 163
Gangrene, concurrent, of the tongue and hand, a case of..... 50
Garrett, Miss, L.S.A...... 341
Gas generated by sewage...... 667
Gee, R., on cod-liver oil as a remedial agent in typhus...... 137
Gell, H. C., on the influence of quinine on the temperature of the human body in health...... 29
Genito-urinary organ, diseases of the...... 542
Glanders, acute, case of...... 318
Glossitis, idiopathic, case of...... 490
Glycogeny...... 342
Goitre, exophthalmic...... 496
Gonorrhœa, acute and chronic, ohstinate cases of, successfully treated by injections of glycerine of tannin...... 319
  a solid injection in...... 508
Gout, pulmonary emphysema in connection with...... 316
  acute, the treatment of...... 658
Gray, Sir J., on medical education...... 557
Greenhow, E. H., on pulmonary emphysema in connection with gout...... 316
Griesinger, Prof., death of...... 64
Griffin, J., on a case of rupture of the œsophagus; death..... 647
Growths, small fatty, obstructing cystic and common ducts... 659
Gubler, M., abstract of inaugural lecture at the Paris School of Medicine...... 367
Gull, W. W., remarks on the natural history of rheumatic fever...... 221

H

HABERSHON, S. O., on wasting of the mucous membrane; atrophy of intestinal villi; chronic diarrhœa...... 480
Hæmatocele, peri-uterine, a case of...... 655
Hæmato-hydrocele treated by a seton...... 606
Hæmaturia...... 325
Hæmoptysis, fatal, case of, with remarks...... 436
Hæmorrhage, post-partum, on a case of...... 255
  on peritoneal adhesions of the gravid uterus as a cause of...... 493
Hair restorers...... 229
Hamilton, R., on sulphurous acid in typhoid fever...... 208
Hanging, a novelty in...... 400
  diagnosis of...... 427
Harelip, on a new method of using needles in the operation for...... 648
Has insanity increased?...... 340
Haward, J. W., on a case of fracture of skull, followed by pulsating fluid tumour of scalp, and escape of cerebro-spinal fluid...... 533
Head, injury to the, compression of brain; great delay in symptoms; death...... 220
Heart, dilatation of right side of the, in a pedestrian...... 442
  the force of the, effective and absolute, remarks on a paper entitled, by Prof. Buchanan... 537
Heath, G., on removal of the tongue by division of the jaw and the use of the ecraseur...... 207
Hemeralopia...... 624
Hemiplegia, left, with complete paralysis of the tongue...... 607
  from disease of the pons varolii...... 658
Hernia, strangulated, two cases of, with the post-mortem appearances...... 212
  cases of...... 261

Hernia, strangulated, hypodermic injection in 670
  femoral, successful treatment of, in the male subject 539
  inguinal, operations for the radical cure; results, case of 600
Herniotomy 607
Herpes, connection of, with lesions of the nerve-trunks 271
  præputialis, recurrent 274
Hewitt, G., clinical lecture on prolapsus uteri and its treatment 462
  on peritoneal adhesions of the gravid uterus as cause of post-partum hæmorrhage 493
Hicks, J. B., on rupture of the vagina in labour 195
Hill, J. D., clinical observations on lesions of arteries and some effects of the deligation of their trunks; concluding with a case of encephaloid cancer of the leg treated by ligature of the popliteal artery, 529, 632
Hillman, W. A., on a case of laryngeal disease: inflammation of larynx, abscesses, paralysis of vocal cords; tracheotomy; recovery: with practical remarks 141
Hip, excision of the, two cases of 98
Hip-joint, dislocation of the, reduction without pulleys, case of 265
Holmes, T., on "hospitalism;" being a criticism on some papers, with the above title, by Sir J. Y. Simpson, in the "*Edinburgh Medical Journal*" for March and June, 1869 581
Homœopathy 335
  and the Queen's Hospital, Birmingham 341
  in Paris 568
Honorable acquittal, an 666
Hopital St. Louis, the 276
Horseflesh 456
Hospital, Convalescent, at Orleans 344
  system, French and English, the 392
  St. Mary's, clinical notes from lectures in the course of clinical instruction at 425
  rule, curious, a 455
  apparatus 498
"Hospitalism," on, being a criticism on some papers, with the above title, by Sir J. Y. Simpson, in the "*Edinburgh Medical Journal*" for March and June, 1869 581
Hospitals, tent, in Paris 666
Howden, J. C., on granular degeneration of the nerve-cells in insanity 593
How shall we dress him? 560
Humerus, luxation of, from epilepsy 325
Humphry, Prof., on the results in thirty-nine cases of excision of the knee 102
Hunt, Dr. T., and the faculty of the medical department of the University of Louisiana 568
Hussman's, Baron, vital statistics of 509
Hydrocephalus, on the fluid of 210

I

ICHTHYOSIS GLOSSÆ 52
Illness of the Duchess of Aosta 568
Inflammation, on the development of heat in 452
Injections, intra-uterine 120
Insanity without delusions 451
  on granular degeneration of the nerve-cells in 593
  on the alleged increase of, in England 612
  and crime 620
Intemperance and legislation 270
Intestinal obstruction lasting forty-six days, case of 536
Iodine, the stains of 176
Ischuria renalis, icterus, and low pneumonia combined, on a case of 206
Itch, sulphur in, a note on the use of 302

J

JACKSON, R., on a case of spinal apoplexy 538
Jamaica medical news 561
Jaundice from hydatids 325
Jenner, Sir W., address delivered at the meeting of the medical Teachers' Association 186
Jerrold, B., on the sick poor of Paris, 282, 396, 499, 566
Jessop, T. R., few remarks on tracheotomy; with cases 313
Johnson, M., on borderland 639
Jordan, F., on a case of severe wound of the knee-joint, treated successfully, and without suppuration, by early, extensive, and repeated counter-irritation of the thigh and leg: an illustration of a new mode of treating inflammation 327

K

KELLY, C., on the spontaneous cure of hydatid cysts 386
Kennedy, W. J., on a case of partial placenta prævia and shoulder presentation 434
Keratitis, notes of a case of 209
Kidney, floating, a case of 379
Knee-joint, incised wound of, application of tourniquet to femoral artery; recovery 265
  case of severe wound of the, treated successfully, and without suppuration, by early, extensive, and repeated counter-irritation of the thigh and leg: an illustration of a new mode of treating inflammation 327
  left, a case in which two loose cartilages were removed by separate operations from the, of the same individual; recovery without an unfavorable symptom 428
Knee, excision of the, the results in thirty-nine cases of 102

L

LABOUR, on rupture ot the vagina in 195
  subcutaneous injection of morphia and aconite in convulsions after 433
Lady doctors 120
  apothecary, a 400
Laryngeal disease: inflammation of larynx, abscesses, paralysis of vocal cords; tracheotomy; recovery: with practical remarks, a case of 141
  growths on both vocal cords 487
Laryngitis, notes of a case in which, followed the administration of calomel 31
  chronic, in a woman aged fifty-two: great dyspnœa; tracheotomy; death from asthena six weeks after operation 322
Laryngoscope without mirror, Voltolini's 176
Larynx, epithelioma of the 324
  carcinoma of the 486
  œdema of the, with subsequent diphtheritic patches 487
  inflammatory œdema of the, entirely confined to the subglottic region, within the ring of the cricoid cartilage; tracheotomy, with good recovery and cure; clinical remarks 650
Laudanum, death from the effects of a dose of 624
Laurence, J. Z., on a case of sympathetic ophthalmia cured by neurotomy: a substitute for removal of the eyeball 92

LECTURES:—

  Lectures on the Physiology and Pathology of the Nervous System, and on the Treatment of Organic Nervous Affections. By C. E. Brown-Sequard, M.D., F.R.S., 1, 65, 121, 233, 401, 457
  Clinical Lecture on Six Cases of Aneurism. By John Eric Erichsen, F.R.C.S 6
  Lectures on Orthopædic Surgery. By Bernard E. Brodhurst, F.R.C.S., 12, 69, 130, 177, 236, 345, 404, 466, 569.
  Abstracts of the Introductory Lectures Delivered at the various Medical and Surgical Cliniques of the Paris School of Medicine 158
  Clinical Lecture on the Treatment of Carbuncle. By James Paget, D.C.L., F.R.S. 180
  Clinical Lecture on Diseased Ankle, Talipes, Diseased Metatarso-Phalangeal Joint, &c. By James Paget, D.C.L., F.R.S 184
  Address Delivered at the Meeting of the Medical Teachers' Association. By Sir William Jenner, Bart., M.D. 186
  Abstract of a Lecture on the Use of Brucine in Stomachal Epilepsy. By J. Spence Ramskill, M.D 187
  Clinical Lecture on the Treatment of Fractures of the Leg. By James Paget, F.R.S., D.C.L., 240, 295
  Clinical Lecture on Nervous Dyspepsia. By Arthur Julius Pollock, M.D 244
  Abstract of the Gulstonian Lectures on Certain Points in the Study and Classification of Diseases of the Nervous System 280
  Observations on Ligature of Arteries on the Antiseptic System. By Joseph Lister, F.R.S. 289
  Clinical Lecture on a case of Fractured Base of the Skull; with Rupture of a Branch of the Spinous Artery, and Pressure on the Brain. By John Adams, F.R.C.S. 298
  Clinical Lecture on a Case of Aneurism of the Femoral Artery, with Rupture of the Sac. By James Paget, F.R.S., D.C.L. 351
  Lecture on the Diseases of Children as a Subject of Special Study. By Wm. Stephenson, M.D 407
  Clinical Lecture on Paralysis with Apparent Muscular Hypertrophy. By Balthazar W. Foster, M.D 413
  Clinical Lecture on Prolapsus Uteri and its Treatment. By Graily Hewitt, M.D. 462
  Clinical Lecture on Paracentesis Pericardii. By T. Clifford Allbutt, M.A., M.D. 464
  Clinical Lectures on Diseases of the Chest. By Hyde Salter, M.D., F.R.S, 513, 572, 625.
  Clinical Lecture on Popliteal Aneurism. By James F. West, F.R.C.S. 521
  Clinical Lecture on Two Cases of Excision of the Knee-Joint. By T. B. Curling, F.R.S 524
  Clinical Lectures Delivered at the Royal London Ophthalmic Hospital, Moorfields. By J. Soelberg Wells 575, 628.
  Clinical Lecture on a Case of Stricture, with Abscess in Perineo. By John Adams, F.R.C.S 630

Lee, H., on excision of the larger joints; with a table of cases 101
  on albumen in the urine, sometimes in conjunction with the coloring matter of the blood, as a consequence of surgical diseases and operations 587
Leg, pain in the, of nine years' duration relieved by trephining 321
Lichen, chronic, treatment of 668
Liebig, Baron, on the alleged poisonous quality of beef-tea and extract of meat 118
  on the nutritive value of different sorts of food, 144, 188, 245, 303
Ligatures, carbolised catgut, on the use of 483
Lipoma nasi, case of 323
Lister, J., observations on ligature of arteries on the antiseptic system 289
  latest observations 395
Lithotomy 489
  the medio-lateral operation of 51
Lithotrity in India 171
Liver, hydatid of 384
  cyst of the, suppuration; evacuation of pus and hydatids; exhaustion; death, a case of 435
  abscess of the, a new treatment employed successfully in four cases, 527, 597, 637
Livingstone, Dr 62
Locking, J., notes of a case in which laryngitis followed the administration of calomel 31
Logie, C. G., on some of the causes of the premature decline of the cavalry soldier 642
"Losing cards." 173
Lunacy 340
  cases 622
Lunatics, increasing number of, in France 509
  Irish 624
Lung, a case in which medullary cancer of the, simulated pleuritic effusion 322
  spike wound of, emphysema 384
  primary cancer of the, simulating pleuritic effusion; experimental paracentesis 490
  right, wound of apex of, hæmoptysis; emphysema; recovery 649
Lymphatic system, structure and mode of origin of the 615

M

Madge, H. M., on a case of intestinal obstruction lasting forty-six days 536
Marcet, W., on a case of Laryngeal disease: inflammation of larynx, abscesses, paralysis of vocal cords; tracheotomy; recovery: with practical remarks 141
Marshall Hall method of prone and postural respiration in drowning and other forms of apnœa and suspended respiration, with some suggestions for its more general adoption by the public 32
  memorial 280
Maternal impression, a case of 37
Maudsley, H., on aphasia 77
Maunder, C. F., on the antiseptic ligature of arteries 37
  on primary excision of the elbow-joint 151
Meade, R. H., on scarification of the cervix uteri in inflammatory affections of the womb 26
Measles followed by diphtheria; death, case of 655
Medical revolution in Spain 116
  Congress of Venice, the 120
  education, practical 166
    observations on the reform of 481
  students, the education of 547
  practice, the refinements of 167
  charges for special services 272
  anatomy 336
  works, new editions of 342
  treatment of invalid soldiers, the 553
  witnesses 555
  hero, a 559
  legislation, colonial 613
  profession, women and the 617
  witnesses, the privilege of 617
Medicine, international 400
  modern 449
  disease, and death, 471, 610
  in Prussia, new enactment touching 512
Medicines, the taste of 623
Meningitis, tubercular, typhoid fever simulating, case of 47
  illustrating the ordinary course of the disease, case of 47
  on the diagnostic value of the ophthalmoscope in 420
  strumous, of obscure character, a case of 380
Mercurial tremor, a case of 157
Meteors, influence of, on health 619
Microscope, spectrum, on the application of the, to medical science 28
  new modes of preparing objects for the 116
Miscellaneous cases, 323, 607
M'Keand, R., on cases illustrative of the necessity of an early removal of an eyeball with lost vision in consequence of accident 150
Modern historian on the social evil, a 456
Monera, the, the lowest form of animal life 497
Morbus Addisonii 644
More, J., on cases of tetanus 249
Mortality from snake bites in India 344
  at differerent ages 505
  of new-born children, report of the committee of the academy of Medicine on the 506
Moxey, D. A., on the administration of food and medicine by the nose when they cannot be given by the mouth 305
Mucous membrane, wasting of the, atrophy of intestinal villi; chronic diarrhœa 480
Munro, W. S. J. H., on a case of compound comminuted fracture of both legs 433
  on a case of extensive wound into the tarso-metatarsal articulation, with the extensor tendons divided 598
Muscles, on certain physical and physiological properties of 509
Muscular asynergia 323
Myers, A. B. R., on aortic aneurism: probable cause of its great prevalence in the Army compared with the Navy and male population, and consequent remedy 250

N

Nævus, hairy, remarkable case of 618
Nails, on markings or furrows on the, as the result of illness 149
Neck, Derbyshire 119
Necrosis, in the neighborhood of the shoulder-joint 324
Nelaton, Dr 64
Nerve, sympathetic, cervical portion of the, a case illustrating the physiology and pathology of the 329
Nerves, cerebral, on certain points in the physiology and pathology of the fifth pair of 103
  influence of, on intra-ocular pressure 394
Nervous system, injury to the, a medico-legal case of 148
Neuralgia, "epileptiform," on the treatment of, in its earlier stages 205
  hair-bleaching from 326
Noble example, a 176
Nose, diseases of the cavities of the, on some new methods of treating 20
  on the administration of food and medicine by the, when they cannot be given by the mouth 305
  large fleshy polypus of the, operation 489

O

Œsopagus, a case in which a live fish found its way into the, and was impacted for about sixteen hours 647
  case of rupture of the, death 647
Ogle, W., on a case illustrating the physiology and pathology of the cervical portion of the sympathetic nerve 329
Ogston, A., on the comparative strength of arteries secured by the methods of ligature, acupressure, and torsion 361
Ophthalmia, sympathetic, a case of, cured by neurotomy: a substitute for removal of the eyeball 92
Os calcis, removal of the, for caries, a case of 216
Ovariotomy, four cases of 44
  in Italy 62
  in France 119
  pedicle clamped; accouchement seventeen months after operation, successful case of 209
  a third series of one hundred cases of, with remarks on tapping ovarian cysts 444
  successful, performed in the fourth month of pregnancy, after rupture of the cyst and peritonitis 643
  and the practice of excessive feeding 665

P

Paget, J., clinical lecture on the treatment of carbuncle 180
  on diseased ankle, talipes, diseased metatarso-phalangeal joint, &c 184
  on the treatment of fractures of the leg, 240, 295
  on a case of aneurism of the femoral artery, with rupture of the sac 351
Painter, R. B., on counter-irritation 370
Palamidessi, Prof., death of 176
Palate, cleft, 210, 378
  in a child aged five years; operation without chloroform; succcessful result 218
  a case of, in a little girl five years of age; operation successful 488
  novel procedure for improving the voice after the operation of staphyloraphy, case of 603
Paralysis, glosso-laryngeal 325
  of sixth and seventh nerves following a blow on the head 326

Paris, the sick poor of, 282, 396, 499, 566
  School of Medicine, abstract of inaugural lecture at the. 367
    contemplated reforms at the 511
  weekly death returns for 559
Parkes, Dr., on the relative power of certain disinfectants 116
Patella, incised wound over, synovitis; suppuration; incision into joint; recovery 547
Pavy, F. W., on the alleged efficacy of the peroxide of hydrogen and ozonic ether as remedial agents in diabetes mellitus 311
Payne, E., on drug action 431
Peacock, T. B., brief remarks on some of the forms of disease observed during and since the last unusually fine summer 198
Pelvis, contracted, with head and foot presentation; turning and craniotomy, a case of 42
Perineal section 378
Perineum, central perforation of the, passage of the whole fœtus through the rent 176
  lacerated, and recto-vaginal fistula 378
Periodicity, physiological, on 450
Periostitis, acute syphilitic, occurring in the epileptic diathesis; recurrence of fits; successful treatment with large doses of iodide of potassium, a case of 99
Petroleum 559
Phthisis, hæmorrhagic, on a case of, with remarks 50
  and contracted lung 52
  fibroid 53
  arsenic in, therapeutical use of 115
  advanced, rawness of the tongue and painful deglution in 155
  dampness of soil and 170
  with dicrotous pulse; sudden death, case of 263
  ab hæmoptysi 372
  hæmorrhagic 391
  on the treatment of, by prolonged residence in elevated regions 444
  on the arsenical treatment of 485
Picrotoxin, the physiological action of 455
Placenta prævia, partial, and shoulder presentation, case of 434
Pleurisy, tapping in 324
Pneumonia; bleeding; rapid recovery 41
  pleuro-, chloroform treatment, three cases of 376
  persistent and alarming hiccough in, cured by the subcutaneous injection of morphia, case of 591
Poisoned socks again 560
Poisoners, wholesale 172
Poison, snake, an antidote to 278
Poisoning, laudanum, by an enema, remarkable case of 90
  by tinctura ferri perchloridi, on 151
  by concentrated sulphuric acid; recovery 266
  opium, treatment of 339
  lead, morbus saturninus 432
  by strychnia, 504, 666
Poisons, patent, the sale of 336
Police, the health of the 616
Pollock, A. J., clinical lecture on nervous dyspepsia 244
Polypus, fibrous, treated by Langenbeck's method of operation, a case of 264
  naso-pharyngeal, successful removal 399
Poppy cultivation prohibited in China 400
Potassium, bromide of, in the nursery 172
  picrate of, the new explosive 337
Pregnancy by inclusion, a case of 506
Prescribing in cheap periodicals 279
Presystolic murmur 384
Pringle, R., on the possibility of stamping-out small-pox, illustrated by three modes of procedure 24
Prison dietary scales 338
Prize, surgical, a 288
Prognosis, the ethics of 331
Prolapsus uteri of seventeen years' standing cured by operation 213
Proper acknowledgment, a 568
Propert, Mr., the late 559
Protector turned traitor 342
Prussian students, the 568
Psoriasis, cases of 39
  unguium 384
Puerperal peritonitis 227
Pupil, on the dilatator muscle of the 505
Pylorus, fibrous thickening of the, perforation; death 439
Pyohæmia, the etiology and nature of 507

Q

Quinine, the influence of, on the temperature of the human body in health 29
  in delirium associated with rheumatic pericarditis, on the value of 93

R

Ramskill, J. S., abstract of a lecture on the use of brucine in stomachal epilepsy 187
Respiration, artificial, on a new and simple method of inducing, in cases of asphyxia from drowning, strangulation, chloroform, poisonous gases, etc 160
Retention of a farthing in the food-passage of an infant for six months 218
Reverend amateur doctors 456

Reviews:—
  Therapeutics and Materia Medica. By Alfred Stille, M.D 63
  Treatise on the Diseases of the Eye, including the Anatomy of the Organ. By Carl Stellwag von Carion, M.D. Translated and edited by Charles E. Hockley, M.D., and D. B. St. John Roosa, M.D 63
  Electro-Physiology and Therapeutics; being a Study of the Electrical and other Physical Phenomena of the Muscular and other Systems during Health and Disease, including the Phenomena of the Electrical Fishes. By Charles L. Morgan, A.B., M.D 64
  The Causes and Treatment of Lateral Curvature of the Spine. By Richard Barwell, F.R.C.S 117
  Lectures on the Theory and Practice of the Ophthalmoscope. By Henry Wilson, F.R.C.S., M.R.I.A 117
  Vesico-Vaginal Fistula from Parturition and other causes, with Cases of Recto-Vaginal Fistula. By Thos. Addis Emmet, M.D 342
  A New Method of Conducting the After-Treatment in the Operation for Vesico-Vaginal Fistula. By J. Goodman, M.D 342
  A Treatise on Syphilis, Historical and Practical. By Dr. Lancereaux. Translated by G. Whitley, M.D 343
  Atlas of Venereal Diseases. By M. A. Cullerier. Translated with notes and additions by Freeman J. Bumstead, M.D 343
  The American Journal of Medical Sciences. Edited by Isaac Hays, M.D 398
  The Richmond and Louisville Medical Journal. Edited by E. S. Gaillard, M.D 398
  The New York Medical Journal. Edited by W. A. Hammond, M.D., and E. S. Dunster, M.D 398
  The St. Louis Medical and Surgical Journal. Edited by G. Baumgarten, M.D., and M. L. Linton, M.D 398
  The Quarterly Journal of Psychological Medicine and Medical Jurisprudence. Edited by W. A. Hammond, M.D 398
  A Hand book of Therapeutics. By Sydney Ringer, M.D. 562
  A Treatise on Syphilis. By Walter J. Coulson, F.R.C.S. 563
  Nouveaux Elements d'Histoire Naturelle Medicale comprenant des Notions Generales sur la Zoologie, la Botanique, et la Mineralogie, &c. Par D. Cauvet 564
  Sound. By John Tyndall, LL.D., F.R.S 565
  The Practice of Medicine. By T. Hawkes Tanner, M.D., F.L.S., &c 565
  A Treatise on the Diseases of Infancy and Childhood. By J. Lewis Smith, M.D 667
  Counsel to a Mother. By Pye Henry Chavasse 668

Rheumatic arthritis 384
Rheumatism, acute, followed by chorea, on a case of 34
  and subacute 52
  treated principally by the alkaline method, cases of 479
  periosteal, a case of 95
  remarks on 369
Rheumatoid arthritis 324
Ridout, C. V., on traumatic tetanus treated by the tincture of the Calabar bean 34
Ringer, S., on the influence of quinine on the temperature of the human body in health 29
  papers on the therapeutic action of drugs 201
Roberts, F. T., and the students in the Liverpool School of Medicine 624
Robinson, C. H., on cases of acute rheumatism treated principally by the alkaline method 479
Roumania 622

S

Salter, H., on the treatment of asthma by belladonna 203
  clinical lectures on diseases of the chest, 513, 572, 625
Sanderson, J. Burdon, on phthisis ab hæmoptysi 372
Sanger, T. F., on the arsenical treatment of phthisis 485
Sanitary matters at the Isthmus of Suez 624
Scientific Congress of France 173
Scurvy, an explanation of the cause of, and the action of the different so-called antiscorbutics; with suggestions as to the best means of preventing the disorder 309
  on the treatment of, by the binoxalate of potash 484
  a case of 656
Septicæmia, cases of 651
Sewill, H., on irregularities of the teeth 577
Shut your mouth 505
Siamese twins, the 61
Sidebottom, E., on a case of spina bifida successfully treated by ligature 646

Skin disease 383
  diseases, vesicular and pustular, pathology of 59
Skull, compound fracture of the, with depression; erysipelas; recovery 41
Small-pox, on the possibility of stamping-out, illustrated by three modes of procedure 24
Smith, D., on the structure of the adult human vitreous humor, 16, 87, 415, 467, 634.
Smith, E., on ventilation 277
  on the digestive derangement accompanying the second dentition 476
Smith, H., description of an improved hæmorrhoidal clamp 598
Smith, T., on nephrotomy as a means of treating renal calculus 442
  on the use of chloroform in the cure of cleft palate; cases; with remarks 587
Smith, W. F., on morbus saturninus (lead-poisoning.) 432
Snake-bite, the reputed cure of 396
Society, Clinical, of London, 164, 226, 269, 330.
  Epidemiological 392
  The Glasgow Medical Missionary 176
  Medical, of London 110
  Obstetrical, of London, 105, 225, 446.
  Pathological, of London, 56, 108, 162, 226, 389, 494.
Sorby, H. C., on the application of the spectrum-microscope to medical science 28
Spence, J., on the use of carbolised catgut ligatures 483
Sphygmography, the practical uses of 339
Spina bifida; injection of iodine; recovery 400
  successfully treated by ligature, case of 646
Spine, injury to the, two cases of 154
  fracture of the, with displacement; reduction by means of pulleys; recovery 220
  concussion of 384
Spleen, enlargement of 323
Splint, improved, for the lower extremities, description of an 594
Spontaneous generation question, the 275
Squire, W., on vaccination; its influence upon the health of infants, and the temperature variations occasioned in its course 585
Statistics of sickness and mortality 277
  of deaths occurring in New York in 1868 666
Stephenson, W., lecture on the diseases of children as a subject of special study 407
Stethescope, the original, versus the solid stethescope 512
Stewart, W., on a case in which a live fish found its way into the œsophagus, and was impacted for about sixteen hours 647
Stomach, extensive perforation of the, attended by peritonitis, without any localised symptoms during life 441
Stone in the bladder, two cases of, enormous size of the calculi. 38
  operations for extraction of, some observations on the, performed at the Leicester Infirmary; containing a statistical account of the lateral and median methods, 532, 595.
Strabismus, paralytic forms of, on the treatment of the 147
  internal 323
  double digergent, operation for 488
  converging, post-mortem examination 508
Struma, a severe case of, remarkable benefit by the waters of the Woodhall Spa 488
Suffocation by coal-gas treated with inhalation of oxygen gas, two cases of, with occurrence of pneumonia in one case, and recovery in both 214
Sulphites, alkaline, the 119
  attacked, the 670
Surgery, ophthalmic, observations on 22
  anticeptic 62
Surgical cases 46
Sutton, H. G., remarks on the natural history of rheumatic fever 221
Swimming baths 621
Syme, Prof., observations on the reform of medical education. 481
Syphilis, phenic acid in 120
  cardiac murmur 384
  case of acute inflammation of the cerebral arteries during 648
Syphilitic disease of the nervous system, a case of 319
  nodes, soft 324
  phagedæna 383
  laryngitis; tracheotomy 384

T

Tabes mesenterica and secondary chronic peritonitis, on a case of 590
Tait, L., on a new method of using needles in the operation for harelip 648
Tarso-metatarsal articulation, extensive wound into the, with the extensor tendons divided, on a case of 598
Tayler, J. W., on the treatment of scurvy by the binoxalate of potash 484
Teeth, on irregularities of the 577
Tetanus, traumatic, treated by the tincture of the Calabar bean 34
  case of 262
Tetanus, cases of 249
  cured by bromide of potassium, case of 257
  Calabar bean in 344
  a severe case of, recovery 344
  case of, rapidly fatal 486
The "cat" for garotters 339
The Paris School for the Higher Branches of Physical and Natural Sciences 176
The Richmond and Louisville Medical Journal 63
Therapeutic, oxygen as a, some remarks on the exhibition of, in connexion with a new, agreeable and easy form of administration by the stomach 372
Thigh, medullary sarcoma of the 152
  wound of 383
Thompson, C. T., on the treatment of scarlet fever 256
Thoracocentesis, the harmlessness and advantages of 512
Thorogood, J. C., on torpor of the colon as a complication in dyspepsia 364
Thought, the duration of 334
Thudichum, J. L. W., on some new methods of treating diseases of the cavities of the nose 20
Tic, the pathology of 168
Tidy, C. M., on the fluid of hydrocephalus 210
Tight clothing in the Army. 558
Tinea tonsurans, treatment of 508
Todd, R. C., on a remarkable case of complete loss of hair all over the head and body from cerebral injury 541
Toe-nail, in-growing 439
Tongue, removal of the entire, 173, 219.
  on removal of the, by division of the jaw and the use of the ecraseur 207
Tracheotomy, a few remarks on, with cases 313
  three cases of 653
Trench, Dr., and the Liverpool Corporation 176
Trichiniasis, is, necessarily fatal? 665
Trousseau, Prof., the late 176
Tubercle, new experiments on the production of 229
Tubercular matter, inoculations of, negative results 624
Tumour, large recurrent, of the lower jaw; removal; rapid recovery 49
  orbital, treated by first extirpating the disease, and then applying the chloride-of-zinc paste, two cases of 156
  hydatid, of the liver treated by simple puncture 211
  three cases of 260
  bursal, beneath the deltoid 264
  phantom 323
  abdominal, probably malignant 325
  cystic, of the maxilla, case of 326
  fibroid, recurrent 378
  fatty 378
  encysted abdominal, spontaneous recovery, a case of 540
Tumours, aneurismal, of the neck and chest, further contributions to the pathology and treatment of 357
  erectile, the presence of muscular fibre in 431
Typhoid, how an outbreak of, was produced 36
Typhoid fever 384
  perforation of intestine; local peritonitis; abscess discharging through abdominal wall; recovery 156
  sulphurous acid in 208
  creasote in, 454, 508.
  relapsing, a case of 544
Typhus, cod-liver oil as a remedial agent in 137
  fever relapsing after an interval of fourteen days 487

U

Ulcer; varicosity; with venous hæmorrhage, cases of 602
United States Navy 620
University of Louisville, U. S., the 505
Unusual inquiry, an 568
Urethra, dilatation of the 120
  ruptured, followed by symptoms of ureter or kidney mischief 326
Urine, constituents of the, new views on the 59
  on albumen in the, sometimes in conjunction with the coloring matter of the blood, as a consequence of surgical diseases and operations 587
Uterine disorder, therapeutics in certain cases of 157
  disorders, sewing machines a cause of 172
  flexions, the pathology and treatment of 230
  traumatism, on the dangers attending 624
Uterus, flexions of the 54
  irritable 54
  chronic inversion of the, on the operations for the relief of, with the account of a case successfully treated by a new method 385
  retroflexion of, in a single woman, caused by lifting a heavy weight 657

V

Vaccination, the neglect of 277

Vaccination in Madras in 1867 279
  from the heifer on an emergency 504
  its influence upon the health of infants, and the temperature variations occasioned in its course 585
  public 618
  Act, the 621
  needle 670
Vagina, imperforate 378
Van Roosbroeck, Dr., death of 568
Varicocele; radical cure 438
Velocipedes 395
Villate's liquor 670
Viper's venom, secondary effects of the 120
Visual impression, on the time requisite to produce a 665
Vitreous humor, adult human, structure of the, 16, 87, 415, 467, 634 ....
Vivisection 338
Vomiting, constant, and eructations relieved at once, and permanently, by sulphurous acid 546
  of three years' duration 607
Voyage wanted, a 455
Vulva, thrombus of the, after delivery; considerable loss of blood; speedy recovery of the patient 609

W

Waist, the, of the period 666
Walker, J. S., on a successful case of ovariotomy: pedicle clamped; accouchement seventeen months after operation 209
Walton, H., observations on ophthalmic surgery 22
  clinical notes from lectures in the course of clinical instruction at St. Mary's Hospital, 91, 425 ....
Waring-Curran, J., on oxide of zinc as a therapeutic agent... 35
Weber, H., on the occurrence of relapsing fever among the polish Jews admitted into the German Hospital in London 252
  on the treatment of phthisis by prolonged residence in elevated regions 444
Weights and measures, decimal system of 608
Wells, J. S., Clinical lectures delivered at the Royal London Ophthalmic Hospital, Moorfields, 575, 628 ....
Wells, T. S., on a third series of one hundred cases of ovariotomy, with remarks on tapping ovarian cysts 444
West, J. F., clinical lecture on popliteal aneurism 521
West coast of Africa 232
Wharburton, J. W., on poisoning by tinctura ferri perchloridi. 151
What to do in cases of sudden illness 230
Whitehead, Dr., of New York, and the *Dublin Quarterly*, 622, 668 ....
Whooping-cough, Tonka bean in 120
Wilkin, J. F., on a case of embolism of the brachial artery... 33
Wilkinson, F. E., on a case of post-partum hæmorrhage 255
Wilks, S., on markings or furrows on the nails as the result of illness 149
Williams, D. W., description of an improved splint for the lower extremities 594
Willis, Dr., in Japan 621
Winn, J. M., on the value of quinine in delirium associated with rheumatic pericarditis 93
Womb, on scarification of the cervix uteri in inflammatory affections of the 26
Wood, J., on fission and extroversion of the bladder and epispadias, with the results of eight cases treated by plastic operations.... 267
Wounds, antiseptic treatment of, remarks on the, 424, 475....

Y

Yellow fever at Peru 568
  in the West Indies 624
Young mother, a 63

Z

Zinc, oxide of, as a therapeutic agent ....

HOLZER
BINDING

J. HOLZER
BINDER
BOSTON MASS